

DOCUMENT RESUME

ED 155 363

CE 016 591

AUTHOR Abelson, Herbert; And Others
TITLE FDA Consumer Nutrition Knowledge Survey. Report II, 1975. A Nationwide Study of Food Shopper's Knowledge, Beliefs, Attitudes and Reported Behavior Regarding Food and Nutrition. Factors Related to Nutrition Labeling.
INSTITUTION Bureau of Foods (DHEW/FIA), Washington, D.C. Div. of Consumer Studies.
REPORT NO FDA-76-2059
PUB DATE Apr 76
NOTE 198p.
EDRS PRICE MF-\$0.83 HC-\$10.03 Plus Postage.
DESCRIPTORS *Attitudes; Beliefs; *Changing Attitudes; *Consumer Economics; Consumer Education; Consumer Protection; Food; *Knowledge Level; *Merchandise Information; National Surveys; *Nutrition; Opinions
IDENTIFIERS Food and Drug Administration

ABSTRACT

During 1973, a nationwide study for the Food and Drug Administration (FDA) was conducted which provided information on nutrition knowledge, beliefs about nutrition, and first reactions to nutrition labeling among food shoppers. This initial research provided a baseline measurement of nutrition knowledge and attitudes among consumers, and in 1975 another nationwide study was conducted. Conducted in two phases, part 1 of the 1975 study consisted of a national survey using data collection instruments which had been revised and refined from the 1973 study. The findings of the survey were reported in the following four categories: nutrition knowledge and information; opinions about food and nutrition; nutrition labeling and open dating; and other food-related beliefs and household practices. Part 2 of the study consisted of a panel study which examined the formation, change, and development of attitudes, beliefs, and knowledge about nutrition. To study the changes, data were gathered again from a sample of people who had participated in the 1973 study. For each of the four categories previously listed, the findings were reported by both gross changes (proportion of shoppers responding in different ways in 1973 and 1975) and net changes (differences between the two figures). (Preceding the reports of this study are two related articles taken from the "FDA Consumer.") (BM)

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CONSUMER NUTRITION KNOWLEDGE SURVEY

REPORT II 1975

A Nationwide Study of Food Shopper's
Knowledge, Beliefs, Attitudes and
Reported Behavior Regarding
Food and Nutrition

DIVISION OF CONSUMER STUDIES
OFFICE OF NUTRITION AND CONSUMER SCIENCES
BUREAU OF FOODS

U.S. Department of Health, Education, and Welfare
Public Health Services
Food and Drug Administration
DHEW Publication No. (FDA) 76-2059

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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PREFACE

The Division of Consumer Studies, Bureau of Foods, Food and Drug Administration has sponsored this Consumer Nutrition Knowledge Survey. The data collected from this survey will assist the Bureau of Foods in the promotion and maintenance of good nutritional status for the nation. The safety, composition, quality and labeling of foods are important to good nutrition. Protection of these attributes on behalf of the consumer through effective regulation forms the heart of the Bureau's programs and policies.

Research on the consumer's knowledge of and attitudes toward nutrition is a longitudinal study to provide information to the Agency in regard to food, nutrition, food labeling, and other current issues of concern. Data on attitudes toward ingredient labeling and comprehension of nutrition labeling are helpful in developing or modifying regulations, planning educational programs and otherwise maximizing consumer usage of food product information.

Adequate knowledge and information are necessary if consumers are to be able to choose foods wisely for themselves and their families. A major source of information on packaged foods is food labeling. The survey grew out of the need for a periodic assessment of how well equipped consumers are to use this information to choose foods wisely and maintain a good nutritional status. The need grows more acute as food market conditions undergo vast changes both in the cost and in the type of foods that are being sold. The number of new foods and food analogues is increasing rapidly. Foods are being fortified or enriched. More foods are being processed and a greater variety of processing methods are being used.

Faced with today's food market, answers to basic questions such as what do consumers know and believe about foods and what are their shopping habits become essential for identifying problem areas. Identification of where problems are most prevalent also involves the identification of population groups especially susceptible to these problems. These population groups can often be identified by background characteristics like age, income, education, sex and region of the country.

The survey is designed to receive input from consumers about what information they need to help improve their nutritional status. The data from which the findings presented in this report were taken will be further analyzed from this perspective and made available in future publications.

Howard R. Roberts, Ph.D.
Acting Director
Bureau of Foods

II. ARTICLES FROM FDA CONSUMER

"Testing Consumers' Food I.Q."
Alice E. Fusillo

"Nutrition Beliefs: More Fashion Than Fact"
Joseph R. Pearce

Testing Consumers' Food IQ

Do consumers understand and use nutrition labeling? How much do they know about nutrition itself? Do consumers check the list of ingredients on food labels? Do they make use of unit pricing? FDA has been asking these and similar questions to help it develop programs and regulations that will benefit food shoppers. This is the first in a series of articles on the findings of FDA's latest survey of the public's knowledge, attitudes, beliefs, and behavior regarding food.

by Alice E. Fusillo

It is no news to consumers that food market conditions are undergoing vast changes both economically and in the kinds of foods that are being sold. New foods and replacements for older foods are being offered in increasing numbers. Foods are being fortified or enriched. More foods are being processed and a greater variety of processing methods is being used. It is thus more difficult than ever to choose among available food products and even to assess one's own diet, much less to plan that of an entire family. To assist FDA in developing programs and regulations on behalf of the consumer, the Agency's Division of Consumer Studies examines the public's knowledge, attitudes, beliefs, and behavior regarding nutrition, food labeling, and other food issues.

In 1973-74 and again in 1975 the Division conducted national representative surveys of U.S. adults who do at least half of the food shopping for their households. The data was collected under contract with FDA by the

Response Analysis Corporation. The same basic questions were asked in both surveys and these questions will continue to be administered periodically to measure change in nutrition knowledge and food purchasing behavior.

The 1975 survey, with an area probability sample of 1,664 food shoppers, covered food shopping habits, including consumer use of open dating and unit pricing information, and comprehension and use of nutrition labeling. General nutrition knowledge and beliefs also were examined.

With all the changes in the food market, FDA wanted to know if consumers had altered their shopping habits over the past year. Only half of the respondents reported changes during this period in the kinds or amounts of food they bought. Almost half of those who had changed their shopping habits said that they were buying either less meat or cheaper cuts. About 13 percent of those surveyed reported buying fewer sweets and snacks and 15 percent said they were watching for specials and using coupons more.

Shoppers were then asked about their use of information on the food package. About half said they checked the list of ingredients the last time they shopped. About two in five said they looked for the unit pricing.

Most shoppers looked for dates on food products but few understood what these dates mean. Does the date mean that the products should be "sold by" or "used by" the date indicated, or both? When milk was used as an example, over half of those questioned were either unsure or thought that the

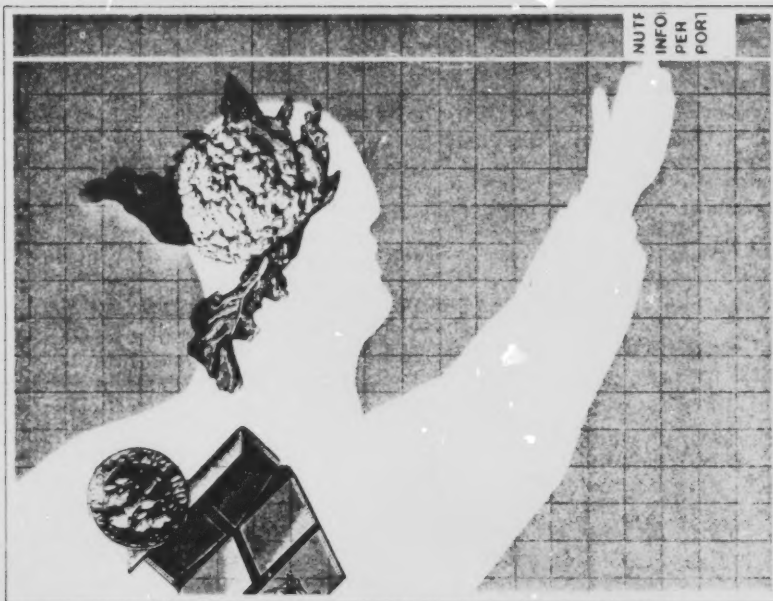
milk should be "used by" the date shown on the container. When asked which date they would rather have on food products, most shoppers (62 percent) wanted the "use by" date. Only a few people (8 percent) expressed a desire for both.

The use of nutrition labeling was examined extensively. Nutrition labeling was originally developed by FDA to help consumers select the best nutritional buys. It has become more and more difficult for consumers to know the nutritional qualities of foods, and FDA wanted to know if nutrition labeling is helpful. Four aspects of nutrition labeling were examined: whether it is used, how it is used, how well it is understood, and what its value is to consumers.

Do people see and understand what is on the nutrition label? Three out of five shoppers said they have seen nutrition labeling and over half of these—33 percent of the people surveyed—reported that they use the label in choosing some foods and beverages.

When shown a typical nutrition label, the majority of respondents felt they understood almost everything on it well enough to use the information to help make buying decisions. The major exception was the label information on sodium (salt) content; only 36 percent of the shoppers felt they understood this section. It is not known whether the people questioned have a medical need for knowing about sodium in foods, and it is possible that people who need this information understand the sodium section better than does the general public.

Two questions on the U.S. Recommended Daily Allowance (U.S. RDA)



part of the label were asked as a "validity check" to find out if people who said they understand nutrition labeling really do. The statistical analysis of the responses to these questions has not been completed, but preliminary data indicates that most of those who said they understand nutrition labeling do.

The survey showed a strong relationship between the amount of formal education of respondents and their reported ability to understand nutrition labeling well enough to use the information in making food choices. Those with at least a high school education indicated a good understanding of the label; people with less than a high school education did not. Among respondents who did not graduate from high school, only one of three said they had noticed the nutrition labeling on foods and less than one of five said they had used this information.

The items on the nutrition label that gave consumers the most difficulty—other than sodium content—were carbohydrates and cholesterol. Only one out of three of those with less than a high school education said they understood the carbohydrate and cholesterol items compared with over half of those who were high school graduates. Only one in five of those with less than a high school education said they understood the sodium content statements while more than two out of five of

those with more than a high school education said they understood it.

To measure the value they place on nutrition labeling, shoppers were asked how much they would be willing to pay for this information and to choose between it and two other types of label information. The majority of those surveyed said they preferred nutrition information to having recipes on the label, but they were about equally divided when asked to choose between nutrition labeling and information on other nutritious foods to serve with the product in the package.

As to their willingness to pay for nutrition labeling, 65 percent said they would be willing to pay at least an extra ten cents on their weekly food bill for nutrition labeling, 56 percent would pay thirty cents, and 40 percent would pay an extra fifty cents.

To determine the uses consumers make of nutrition labeling, they were asked whether they would use it at home for planning a better diet (by adding up the nutrients in all the foods eaten in a day) or use it in the store for selecting the best nutritional buys. More said they would use it in the store for better buys. About 20 percent said they did not expect to make much use of information on nutrition labels.

The survey also examined consumers' beliefs about foods, such as the beliefs that natural vitamins are different from synthetic vitamins and that

food made "from scratch" is better than canned or frozen food. Seven of ten shoppers said canned or frozen vegetables are not as nutritious as fresh vegetables, and six of ten said natural vitamins are better than synthetic vitamins. An analysis of these and other beliefs will be presented in a future issue of FDA CONSUMER.

Other questions about nutrients included whether certain nutrients can be gotten easily because they are found in many foods or because high quantities of them are found in the most frequently used foods. Respondents also were asked which nutrients are stored by the body and which have to be eaten each day for adequate nutrition. Finally, they were asked about four different types of foods. The four types were represented by regular whole milk for the milk and milk products group, beef for the meat group, tomatoes for the fruits and vegetables group, and enriched bread for the bread and cereal group. People were queried as to which foods could be substituted for these foods, what nutrients each of the four foods contain, and how these foods help the body.

From the answers, it was evident that most of those questioned did not know much about iron, riboflavin, thiamine, and vitamins A and D. Few shoppers knew that beef and enriched bread are not relatively important for strong teeth and bones. Most were not sure about substitute food sources, particularly those foods that are similar to milk, tomatoes, and beef.

Survey findings that will be reported in subsequent articles will compare the American food shopper of 1973-74 with the American food shopper of 1975. Consumer nutrition knowledge and beliefs will be explored in greater detail to show how those with less education and income compare with those who have more education and income, and what differences occur by age, sex, and racial and ethnic origin.

In addition to using it in planning its own programs and regulations, FDA distributes the information from its surveys of consumer knowledge of nutrition and food to dietitians, nutritionists, libraries, consumer groups, and industry.

Alice Fusillo is a consumer science specialist with FDA's Bureau of Foods.

Nutrition Beliefs: More Fashion Than Fact

Based on their answers to six questions, a majority of food shoppers interviewed were classified as "not well informed" about food and nutrition.

by Joseph R. Pearce

Comparison of findings in the 1975 FDA nutrition knowledge survey with those of the 1974 survey shows that a large number of consumers still hold beliefs about nutrition that are influenced by custom and food fashion rather than fact (see chart 1). Response Analysis Corporation conducted nationwide surveys of American food shoppers in 1973-74 and again in 1975 to provide information on nutrition knowledge and beliefs for the FDA Division of Consumer Studies.

In one of the eight questions designed to measure consumers' beliefs about food and nutrition, shoppers from both surveys were asked whether vitamin C added to a fruit drink gives the same benefit as an equal amount of vitamin C from fresh oranges. The proportion of shoppers who answered "no," indicating that they believe that added vitamin C is not as beneficial as natural vitamin C, rose from 51 percent in 1973-74 to 60 percent in 1975.

The fact is that natural and added vitamin C give the same benefit. Chemists and pharmacists have repeatedly stated that any vitamin has the same properties whether it is "natural" or "synthetic." A vitamin has a specific chemical structure whether synthesized in a laboratory or extracted from plant or animal parts. There are no known nutrition advantages that justify a preference for "natural" vitamins. This fact is especially significant because of the higher prices that "natural" vitamins often command.

There was an increase of 7 percent in the proportion of shoppers who held the erroneous belief that people cannot stay healthy if they never eat meat, poultry, or fish. Forty-one percent of the food shoppers sampled in 1975 felt these foods were essential to health, compared to 34 percent in the

earlier survey. In truth, people can stay healthy without eating meat, poultry, or fish if they eat alternative foods such as milk, cheese, or eggs which will supply the essential high quality protein normally obtained from meat. Dairy products not only provide high quality protein, but also essential nutrients such as vitamin B₁₂, calcium, vitamin D, and riboflavin.

In both surveys, a sizable number of people—approximately four out of ten—agreed with the statement, "If you just eat a variety of foods from the supermarket, you will get enough nutrition." Eating a variety of foods is not the same as selecting appropriate foods for a nutritionally balanced diet. Balanced nutrition comes from selecting a variety of foods which will supply the calories, protein, vitamins, and minerals required for body growth, repair, and maintenance of good health. Thus, the shopper needs to know about the nutrient content of foods, which provide the best sources of the various nutrients, and how to combine them into a healthful diet.

Selecting food for nutritional value means choosing from the four basic food groups of meat, vegetables, milk, and bread based on knowledge of the nutrients they contain. Selection as well as variety is a key to preparing nutritious meals.

Almost a fourth of the food shoppers interviewed in both years believed that a person who simply weighs the right amount is receiving proper nutrition. Although proper weight is one of the factors considered in determining whether a person is getting proper nourishment, deficiencies in vitamins and minerals cannot be determined by the weight factor alone.

A revised question in the 1975 survey asked consumers whether canned or frozen vegetables are as nutritious as fresh vegetables. Close to three-quarters of the respondents said fresh vegetables are more nutritious. The fact is that food can lose nutrients in processing, cooking, and storage whether in the home or in the factory. Varying amounts of nutrients will be lost to the extent that foods are improperly processed, overcooked, or stored at improper temperatures and in open containers, whether in the home or in commercial kitchens.

Thus, fresh foods are not necessarily more nutritious than frozen ones. Nutrient content depends on how they are handled. The vitamin C value of frozen orange juice is about the same as fresh provided it is stored well below 32 degrees F.

Cooked vegetables lose close to a fourth of their vitamin C after 24 hours in the refrigerator. Since many vegetables contain water-soluble vitamins, loss of these vitamins can occur if the vegetables are cooked in an excess of water which is then discarded.

Another common belief held by American food shoppers concerns between meal snacks. Of the consumers sampled in 1973-74, 42 percent believed that food eaten between meals is never as good for health as the food eaten at regular meals. About the same proportion of the shoppers sampled in 1975 held that same belief.

In reality, nutritional value depends on what types of food are eaten, not the time of day they are eaten. Excessive consumption of between meal snacks with low nutrient-to-calorie ratios such as soft drinks, candy and potato chips may be detrimental to health. However, nutritious snacks such as milk, cheese, or fruit, eaten in moderation, can contribute to a nutritionally balanced diet. Raw vegetable snacks also are nutritious, being low in calories and containing essential vitamins, minerals, and fiber.

Less widely held beliefs include, "You can get enough nourishment if you just eat what you like," and, "Any food sold in a supermarket is good for you." Fewer than one in five shoppers subscribed to these beliefs in both years. A majority of consumers knew that discretion and selection are necessary for proper nutrition. Yet, results of the 1975 survey emphasize that the majority of food shoppers lack the nutrition information that would allow them to make informed choices.

A new measurement in the 1975 survey consisted of the construction of a "beliefs index" (see chart 2). Consumers' beliefs about food and nutrition were measured by use of a composite index constructed from six of the eight questions discussed above. The questions on which the index was based concerned: (1) nourishment and foods people like, (2) food sold in the supermarket, (3) food eaten

between meals, (4) body weight as a sign of proper nourishment, (5) nutritional value of canned or frozen vegetables vs. fresh vegetables, and (6) nutritional value of added vs. natural vitamin C.

Shoppers were classified "well informed" if they answered four or more questions correctly and "not well informed" if they answered three or less correctly. On this basis, a majority of the consumers surveyed—51 percent—were classified as "not well informed."

To obtain more detailed data on consumers' food beliefs, the responses of those surveyed were analyzed on the basis of such characteristics as age, education, region of the country, socioeconomic status (an index of income, education, and occupation, and race.

This breakdown showed that younger consumers were more likely to be "well informed" than older ones. Those with college education were better informed than those with high school education or less.

The breakdown by region of the country showed that the consumers living in the West had the highest percentage of "well-informed" shoppers while those in the South had the lowest percentage. When socioeconomic status was examined, those with "high" status were more likely to be "well informed" than those with "low" status. The breakdown for race showed that 51 percent of the non-black respondents were "well informed" compared to 37 percent of the blacks.

The survey indicated there is a relationship between a consumer's beliefs of food and nutrition and the way that consumer rates his or her own health. Those who were classified as "well informed" on the basis of their answers to the survey questions were more likely to rate their health as excellent than were those who were not well informed. For example, older people not only have declining health that naturally comes with age, but also have misinformed food beliefs which may compound their health problems.

The breakdown of the survey data by age, education, and other characteristics of the respondents should be useful to nutrition educators as well as to FDA in pinpointing population

groups for whom special efforts are needed to improve their nutrition information.

Other findings of the 1975 consumer nutrition knowledge survey will be reported in future issues of FDA CONSUMER.

Joseph Pearce is a consumer science specialist with FDA's Bureau of Foods.

Chart 1: What Food Shoppers Believe About Nutrition

Shoppers' Beliefs	Total Shoppers		Agree	Disagree	Depends	No Opinion or Not Sure
	1973-74	(1,500)				
	1975	(1,664)				
Added vitamin C in a fruit drink gives the same benefit as an equal amount obtained from oranges.	(1973-74)		34%	51%	5%	10%
	(1975)		30%	62%	2%	7%
People who do not eat meat, poultry, or fish can stay healthy.	(1973-74)		58%	34%	0%	7%
	(1975)		48%	41%	8%	3%
Eating a variety of foods from the supermarket will provide enough nourishment.	(1973-74)		40%	39%	19%	2%
	(1975)		39%	43%	15%	3%
Canned or frozen vegetables are just as nutritious as fresh vegetables.	(1973-74)		No comparable question in 1974.			
	(1975)		18%	71%	7%	4%

Chart 2: Food Shoppers' Beliefs Index—1975 Survey

	Not Well Informed	Well Informed
All Food Shoppers (1,664)	51%	49%
Age:		
18 - 34 (659) ¹	43%	57%
35 - 49 (561)	47%	53%
50 - + (433)	59%	41%
Education:		
Less than High School (212)	72%	28%
High School (948)	54%	46%
College (497)	34%	66%
Region of Country:		
North East (419)	47%	53%
North Central (463)	48%	52%
South (519)	59%	41%
West (263)	45%	55%
Socioeconomic Status:		
Low (545)	68%	32%
Middle (600)	50%	50%
High (519)	31%	69%
Race:		
White/other (1,485)	49%	51%
Black (177)	63%	37%

¹ Figures in brackets are number of respondents

FDA Consumer

VOL. 10 NO. 5/JUNE 1976

FOOD AND NUTRITION

A Survey of Information, Belief, and Behavior

Part 1

Findings from Second Nationwide Sample
of Food Shoppers

FINAL REPORT prepared by: Herbert Abelson,
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Response Analysis Corporation
Princeton, New Jersey

Conducted for

DIVISION OF CONSUMER STUDIES

BUREAU OF FOODS

FOOD AND DRUG ADMINISTRATION

April 1976

RAC 3769

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INTRODUCTION

During 1973, Response Analysis conducted a nationwide study for the Food and Drug Administration* which provided information on nutrition knowledge, beliefs about nutrition, and first reactions to the concept and features of nutrition labeling among food shoppers. In 1975, a second phase of this research was carried out.

Objectives

The main objective of the initial research was to obtain a baseline measurement of nutrition knowledge and attitudes among persons primarily responsible for household food purchases. The 1975 research has as its objectives:

- To extend the findings from the initial study to a second point in time.
- To develop a standardized and efficient test for future uses by continued refinement of the nutrition knowledge measures used in the first study.
- To construct new questions to replace those which did not yield useful information, and to add new areas of interest which have developed since the initial research.
- To examine the formation, change and development of attitudes, beliefs and knowledge about nutrition through the means of a panel study.

Research Procedure

To an extent, this survey is a replication of the one reported in March 1974. However, there are some basic differences in data collection methods and instruments.

Sampling and Interviewing

The data were collected by means of a nationwide probability sample design described in the Appendix to this report. Personal face-to-face interviews were conducted between July 1 and August 7, 1975, yielding a total of 1,664 interviews with chief food shoppers.

People 50 years old and over were sampled at half the rate at which they would naturally occur, thus increasing the base size of the group age 18-49.

Men were also oversampled in order to provide a sufficient number for analysis (366).

*See "Food and Nutrition: Knowledge, Beliefs," prepared for Division of Consumer Studies, Bureau of Foods, Food and Drug Administration, by Response Analysis Corporation, March 1974.

Instruments and Exhibits

The questionnaire used for this survey was refined from the previous survey instrument through the aid of statistical analysis and a series of pretests and was reviewed by all study participants -- Response Analysis staff and consultants and Food and Drug Administration staff.

A special analysis was made of the nutrition knowledge quiz following the 1973 study. The purpose of this analysis was to refine the quiz as a measure of nutrition knowledge which can be administered to the public as part of a survey and still be scored and analyzed as a test.* Following this analysis, the nutrition knowledge quiz section of the questionnaire was considerably revised and improved upon.

A total of 36 developmental pretest interviews were conducted in four waves. (See Appendix for further details on this, and other phases of the developmental part of the research.)

In addition to the standard developmental pretesting, a separate 100-case pretest was conducted in four geographic locations (Massachusetts, Alabama, Michigan, and Oregon). Two types of analysis were conducted with the data collected in this pretest of the questionnaire:

- An item analysis was performed on the new nutrition knowledge quiz to determine if it was working well as a test. This analysis showed that the quiz was, in fact, functioning as a test of nutrition knowledge.
- One section of the questionnaire which was developed for this year's survey was used to collect information on respondents' eating behavior (or "dietary intake") for the 24-hour period prior to the interview. The pretest data from this section were analyzed to determine whether the measure of dietary intake provided internally valid data, which it did.**

A further look at the nutrition knowledge quiz was obtained also as a part of instrument development. Eighty-five students from an introductory nutrition course at Rutgers University (taught by Dr. Paul Lachance) filled out just the knowledge section of the questionnaire. The students' scores were compared with the shoppers' scores; the mean score for the students was higher than that of the shoppers.

*See "National Nutrition Survey, Questionnaire Item Analysis," prepared for Division of Consumer Studies, Bureau of Foods, Food and Drug Administration, by Response Analysis Corporation, October 1974.

**See "1975 Nutrition Survey, Item Analysis - Nutrition Knowledge Quiz, Dietary Intake Pretest Analysis," prepared for Division of Consumer Studies, Bureau of Foods, Food and Drug Administration, by Response Analysis Corporation, June 1975.

Report Organization

This report is in two parts:

Part 1 -- This document. A presentation of the findings and methodology from the second nationwide sample of food shoppers.

Part 2 -- A separate report of findings from a Nationwide Panel Sample. Detailed tabulations from each of these parts of the research as well as magnetic data tape records have been prepared.

Findings on the 24-hour dietary intake of shoppers are reported separately.

Acknowledgements

Ms. Alice Fusillo and Ms. Arletta Beloian of the Food and Drug Administration participated in every phase of the work and provided valuable assistance.

Dr. Paul Lachance of Rutgers University, Dr. Joan Gussow of Teachers College, Columbia University, and Dr. Samuel Messick of Educational Testing Service gave of their time as necessary, in the role of consultants. We wish to thank them for their time and expertise.

HIGHLIGHTS

Nutrition Knowledge

A series of questions has been developed and refined which measures shoppers' basic knowledge of nutrition -- called a "nutrition knowledge quiz." The knowledge quiz covers information shoppers have on various nutrients -- how easy it is for the body to obtain these nutrients and whether or not the body stores the nutrients. The quiz also has a series of questions regarding representatives of the four food groups: dairy (milk), meat (beef), vegetable/fruit (tomatoes), and grain (bread). This series of questions covers knowledge about the nutrition elements of the foods, their value to the body, and foods which might be used as substitutes for them.

1. A score was developed from the above questions, giving respondents one point for each correct answer they gave. The maximum score possible is 134; the actual highest score received was 115. The mean nutrition score among shoppers is 71.

When examining subgroups of shoppers, the following differences become apparent:

- Younger shoppers (under 50 years old) score higher than older shoppers.
 - Shoppers in the higher socioeconomic groups score highest. (Socioeconomic status is based on education, income and occupation. In the case of nutrition knowledge, education seems to have the strongest influence. The higher a shopper's education, the higher the score on nutrition knowledge.)
 - Shoppers in the South score lower than those in other regions.
 - Women score higher than men.
 - Blacks score lower than all other respondents grouped together.
2. Shoppers were also asked to rate their nutrition knowledge on a scale from one to ten, with "1" indicating very little knowledge and "10" indicating knowledge comparable to that of food scientists and dietitians. (This was done prior to the nutrition knowledge questions.)

A third of shoppers place themselves in the high group (know "quite a bit" or "a lot" about nutrition); almost four in ten see themselves in the middle range (know "some"); and a fourth rate their knowledge of nutrition fairly low (know "not too much" or "almost nothing").

Since 1973 there has been a somewhat downward shift in how shoppers perceive their nutrition knowledge. Shoppers are somewhat more likely to place themselves in the lowest categories now than they were two years ago.

3. Shoppers' knowledge of whether or not certain nutrients are easy or hard for the body to get, and whether the body stores the nutrients is somewhat uneven. For example, while at least three-fourths of shoppers correctly identify fat, carbohydrates and protein as nutrients which are easily obtained by the body, less than four in ten know this is true of thiamin (vitamin B₁) and riboflavin (vitamin B₂). In addition, a majority of shoppers believes that calcium, vitamin D and iron are easy to get, when in fact, they are difficult for the body to obtain.

Another misconception which exists among a majority of shoppers is that the body stores carbohydrates.

4. While many shoppers exhibit some working knowledge of the nutrient content, value to the body and appropriate substitutes for the four foods studied, some misconceptions are apparent. The following is a summary of responses given by a majority of shoppers. (The items in parentheses are not scored as a correct answer.)

<u>Food</u>	<u>Nutrition Elements</u>	<u>Value to the Body</u>	<u>Substitute Foods</u>
MILK	Calcium Protein Fat Vitamin D (Vitamin A)	Strong teeth and bones Building body tissues (Healthy skin)	Cottage cheese Eggs Peanut butter
BEEF	Protein Fat Iron	Building body tissues Builds blood cells (Strong teeth and bones)	Chicken Eggs Fish Peanut butter Cottage cheese
TOMATOES	Vitamin C	(No items in this category -- either correct or in- correct -- are selected by a majority of shoppers)	Oranges Carrots Broccoli
ENRICHED BREAD	Carbohydrates Thiamin Riboflavin (Fat)	Building body tissues (Strong teeth and bones)	Macaroni White potatoes Rice

Beliefs About Food and Nutrition

5. Shoppers were also asked a series of questions regarding their opinions or "beliefs" about some aspects of food and nutrition. The most widely held misinformed belief is:

- Vitamins which are added to a food (such as fruit drink) do not provide as much benefit as the vitamins found in a food naturally (e.g., fresh oranges or grapefruit).

Shoppers are divided on these issues: *

- Just weighing the right amount indicates proper nourishment.
- Just eating what you like will provide enough nourishment.
- Any food sold in the supermarket is good for you.

Differences in how widely held two of these beliefs are have occurred since the 1973 survey:

- More shoppers this year believe that added vitamins do not provide the same benefit as natural vitamins. (51% in 1973, vs. 62% in 1975)
- Fewer shoppers this year believe vegetarians can stay healthy without eating meat. (58% in 1973, vs. 48% in 1975)

Nutrition Labeling

6. A majority of shoppers (58%) say they have noticed food products which have nutrition labeling.

A third of all shoppers say they have actually made use of nutrition labeling in making buying decisions. (This represents somewhat over half of those shoppers who have seen the labeling.)

7. A sample nutrition label was shown to respondents and a series of questions covering their understanding and evaluation of it was asked.

About a third of shoppers (34%) say they understand at least seven of the eight components of the label which were studied. About another third (35%) say they understand four, five or six of the parts of the label, and the remainder (31%) report understanding only three or fewer of the components.

* These issues were judged to be incorrect by the nutrition consultants.

The most widely understood parts of the label are:

- Serving size or servings per container (85%)
- Calorie content (82%)

A majority say they understand each of the remaining information segments on the label, with the exception of sodium content.

- U. S. Recommended Daily Allowances (64%)
- Protein content (62%)
- Information on fat (58%)
- Carbohydrate content (56%)
- Cholesterol content (51%)

Sodium content information is reported as being understood by 36% of the shoppers.

8. Shoppers are divided on whether they would prefer to use nutrition labeling as a shopping aid ("to get the best nutritional buys") or as an aid in planning and evaluating diets at home ("to help plan a better diet at home"). Nevertheless, more shoppers (42%) say they would prefer help in getting the best nutritional buys than say they would use the information at home (28%).

About a fifth of shoppers, however, say they probably will not be using nutrition labeling at all.

9. While support for and interest in nutrition labeling has slackened somewhat since 1973, there is still widespread favorability toward nutrition labeling among shoppers.

When asked to make the choice between having nutrition label information and information on recipes, shoppers strongly prefer nutrition label information (58% vs. 17%).

When asked to choose between two types of nutrition-related information, shoppers are divided in their opinions as to which would be preferable to have on food packages. Forty-two percent say they would prefer nutrition label information, but 37% pick information on making a well-balanced meal with the food in the package.

The findings on the above two questions were somewhat different in 1973:

- More shoppers in 1973 (79%) picked nutrition label information over recipes (9%).
- Shoppers in 1973 were more likely to choose nutrition label information (64%) over information in making a balanced meal (20%).

10. Many shoppers (72%) say they would make use of nutrition labeling to help decide about buying a new brand for the first time.

In addition, many shoppers (78%) think nutrition labeling will benefit them as homemakers at least a little.

Since 1973, however, fewer shoppers say they will get "quite a bit" of benefit -- 52% said so in 1973, as opposed to 45% in 1975.

One measure of shoppers' feeling about nutrition labeling was obtained by asking them if they would be willing to pay an extra amount of money (up to 50¢ per week) so that this information could be put on food products.

40% are willing to pay 50¢ more each week
16% are willing to pay 30¢
9% are willing to pay 10¢
34% are not willing to pay anything

Again, this year's findings indicate somewhat less favorability toward nutrition labeling since 1973. For instance, in 1973, 48% of shoppers said they were willing to pay 50¢ extra a week for nutrition labeling, and 25% were not willing to pay anything.

11. Another kind of information which appears on food products was studied -- open dating. One example of open dating was included in the survey -- dates stamped on milk.

Some confusion exists among shoppers as to the meaning of dates on milk. Some think it refers to the date by which the product should be sold to the customer (43%). Some, however, think it means the date by which the milk should be used by the customer (38%).

When asked which way they would prefer, a majority of shoppers say they would like the date to refer to when the milk should be used by the customer.

Household Practices

12. About half of food shoppers (47%) report that someone in their household takes vitamins regularly -- most often it is the food shopper herself (or himself) who takes them. In most cases, vitamins are taken as a precautionary measure and not for any particular dietary need.
13. A majority of shoppers (57%) say that someone in their household is trying to either gain or lose weight (most trying to lose). The shopper and spouse are most frequently mentioned as trying to lose weight.

14. Shoppers most often report doing their shopping once a week (55%). Many say they made a list (62%) and read ads for specials (68%) before their last food shopping.

While on their last shopping trip, 75% of shoppers looked for dates on products, 41% looked for unit pricing, and 46% checked a list of ingredients on one or more food products.

15. According to about half (46%) of shoppers, they have been changing their shopping behavior in some way over the last year. These changes most often take the form of using less or cheaper cuts of meat, watching for specials and using coupons more, and buying fewer sweets and snacks.

FINDINGS IN DETAIL

Notes for reading tables:

- a. If there is a % sign at the top of a column of figures, then the column reads down and adds to 100%, unless otherwise noted.
- b. If there is a % sign next to the first number in a row of figures, then the figures read across and add to 100%, unless otherwise noted.
- c. A % sign next to each number in a table means that the figures are not additive either across or down. This kind of format would be used for showing partial tables (e.g., just the extent of agreement with a number of agree-disagree statements).
- d. The computer tables from which we work sometimes add to 99% or 101% when they should add to exactly 100%. These discrepancies are due to rounding off of the percents. We have adjusted these figures in the report when necessary, to add to 100%.
- e. The bases shown in parentheses in the tables are actual numbers of respondents. These bases would be used when estimating the statistical significance of percentage differences.

Percentages are derived from the weighted frequencies, which are shown in the original detailed tabulations not shown here. Any repercentaging which the reader may wish to do should utilize these weighted frequencies.

- f. Analysis variables are often defined on the page where they first appear. A fuller explanation of them is included in the Appendix.

I.

Nutrition Knowledge and Information

- Self-Concept of Nutrition Knowledge
- Nutrition Knowledge Score
- Specific Nutrition Knowledge Questions

1. SELF-ESTIMATE OF NUTRITION KNOWLEDGE

As in 1973, shoppers were asked to rate their nutrition knowledge on a ten point scale, with a rating of "1" representing the least amount of nutrition knowledge, and a rating of "10" being considered comparable to that of food scientists and other nutrition experts. As is shown below, a third of respondents in both 1973 and 1975 believe that they know "quite a bit" about nutrition.

There has been a slight downward shift from mid-scale to the lower ratings by other shoppers. Fewer shoppers in 1975 rate their nutrition knowledge as "moderate" compared with 1973, while the proportion regarding their knowledge as "low" has increased slightly.

Table 1

Nutrition Scale

ABOUT HOW MUCH DO YOU KNOW ABOUT NUTRITION?		All food shoppers	
		1973 base: (1,500)	1975 (1,664)
A LOT { FOOD SCIENTISTS HOME ECONOMISTS DIETICIANS	10	2%	2%
	9	4	5
	8	16	15
	7	12	11
QUITE A BIT		34%	33% High
SOME	6	24	20
	5	19	18
		43%	38% Moderate
NOT TOO MUCH	4	5	6
	3	10	10
	2	2	4
		22%	26% Low
ALMOST NOTHING	1	5	6
Not sure		1	3

There is variation among homemaker subgroups on self-estimate of nutrition knowledge. Looking at the mean ratings, shoppers with at least some college experience and those who report practicing the most care in actual food shopping tend to rate themselves much higher than do others. In fact, half of the college educated respondents (52%) actually score high on the nutrition knowledge questions (see p. 9). Half of shoppers who rate themselves high on nutrition knowledge also score high on the nutrition quiz.

Table 2
Self-Concept of Nutrition Knowledge by Subgroups

	<u>Self-Rating of Nutrition Knowledge</u>			
	<u>Low</u>	<u>Moderate</u>	<u>High</u>	<u>Mean Rating</u>
All food shoppers (1,664)	26%	38	33	5.61
AGE				
18 - 34 (659)	23%	45	31	5.57
35 - 49 (561)	24%	35	38	5.75
50 + (433)	27%	35	33	5.54
EDUCATION				
Less than high school (212)	48%	28	16	4.19
High school graduate (948)	25%	43	30	5.49
College (497)	12%	35	51	6.54
REGION				
Northeast (419)	21%	37	38	5.87
North Central (463)	24%	41	34	5.66
South (519)	32%	36	27	5.16
West (263)	20%	39	39	5.91
NUTRITION KNOWLEDGE				
Low (555)	41%	35	18	4.62
Moderate (542)	22%	38	38	5.85
High (567)	10%	41	48	6.42
CAREFUL SHOPPER SCORE*				
Low (355)	39%	31	23	4.81
Moderate (834)	25%	38	34	5.64
High (475)	14%	44	41	6.12

(Not sure, no answer not shown)

*Briefly, this index is based on a series of behavioral questions relating to shopping style. See page 80 for a complete description of the score.

2. INTRODUCTION TO NUTRITION KNOWLEDGE

Following is a discussion of the nutrition knowledge quiz which was developed to get a broad measure of nutrition knowledge among food shoppers. This quiz was first developed in the 1973 baseline survey and was considerably revised for this year's survey.

Following the original analysis of the data from the 1973 survey, a further analysis of the knowledge quiz was performed using a variety of statistical techniques.* The purpose of this further analysis of the knowledge quiz was to refine it in order to develop a good measure of nutrition knowledge which can be administered to the public as part of a survey.

As a result of the analysis, the knowledge quiz was, in fact, revised substantially. The nature of the revisions focuses on the questioning technique, although some content changes were also made. The main change in the questioning technique was to design the questions so that in effect a "yes" or "no" or "not sure" response was required to each part of the quiz, rather than allowing respondents to select items from a list. This type of technique was found to be necessary for analyzing the quiz as a "test."

In addition, the quiz was shortened to include only those items which seemed to be the best predictors of nutrition knowledge, as determined by the statistical analysis.

The subject areas covered by the quiz include: how easily the body obtains various nutrients and whether those nutrients are stored by the body or not; questions regarding representatives of the four food groups -- dairy (milk), meat (beef), vegetable/fruit (tomatoes), and grain (bread). These questions cover three main areas: other foods which might be substituted for the foods studied, nutrients contained in the foods studied, and how the body uses the foods. More specifically, questions included in the nutrition knowledge score are:

Nutrients which are easy for the body to get and those which are hard to get.

Nutrients which are stored by the body and those which are not.

Foods that have a lot of the same benefits to the body that (milk, beef, tomatoes, bread) have.

Main nutrients contained in (milk, beef, tomatoes, bread).

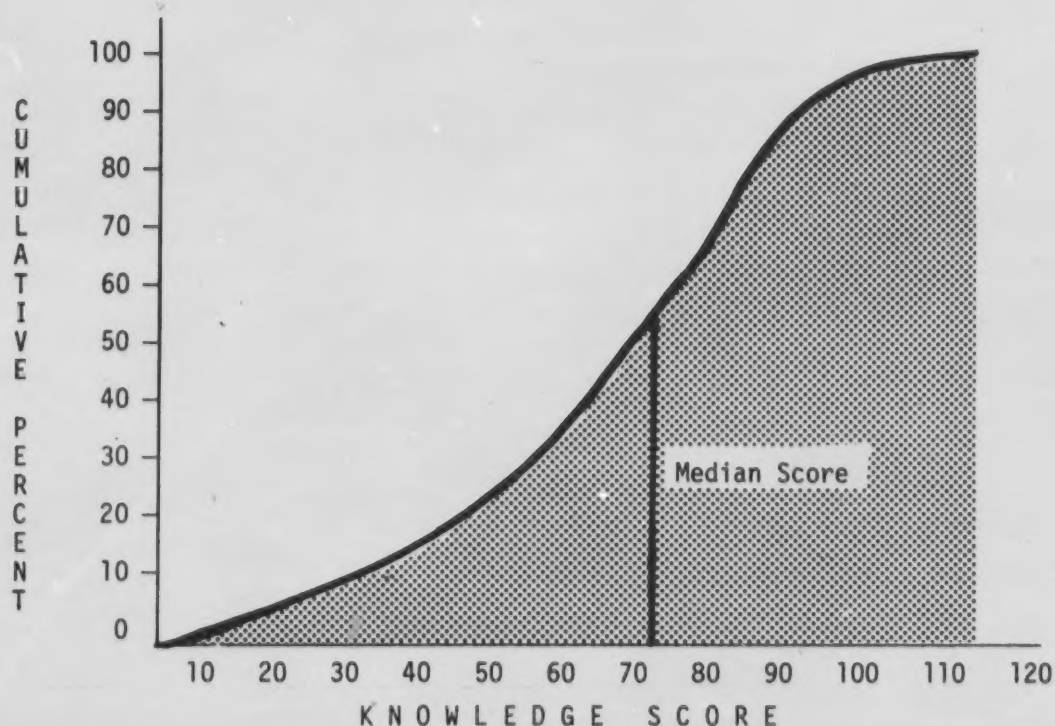
Main functions foods (milk, beef, tomatoes, bread) perform for the body.

*See "National Nutrition Survey, Questionnaire Item Analysis," prepared for Division of Consumer Studies, Bureau of Foods, Food and Drug Administration, by Response Analysis Corporation, October 1974.

Shoppers were given one point for each correct answer on the quiz. If a shopper answered every item correctly, the score would be 134. In fact, the highest score received by any shopper was 115.

Shoppers were placed into three groups of approximately equal size according to their score. These groups are labeled "low," "moderate" and "high." Figure 1, below, is a graphic representation of how shoppers nationwide score on the knowledge quiz.*

Figure 1
Nutrition Knowledge Score



*For complete details of the scoring procedure, see Appendix.

Differences in the level of knowledge become apparent when examined by homemaker subgroups.

- Younger respondents exhibit more nutrition knowledge than do older shoppers.
- Nutrition knowledge increases with socioeconomic status.* (Educational attainment, which is part of the socioeconomic score, plays an important role in how shoppers score on the quiz. For example, 52% of the college educated score high on the quiz, as compared with 27% of those who graduated from high school and only 6% of those with less than 12 years of education.)
- By region of the country, there is little difference in knowledge, except that the Southern shoppers score lower than do shoppers in other regions.
- Women are slightly more knowledgeable than are men.
- Blacks are significantly less knowledgeable about nutrition than others.

*Socioeconomic status index was developed from three variables: education, income and occupation. See Appendix for a detailed description.

Table 3
Nutrition Knowledge Score by Population Subgroups

	<u>Nutrition Knowledge Score</u>			<u>Mean Score</u>
	<u>Low</u>	<u>Moderate</u>	<u>High</u>	
All food shoppers (1,664)	36%	32	32	69.28 *
AGE				
18 - 34 (659)	26%	32	42	75.17
35 - 49 (561)	31%	35	34	71.92
50 + (433)	47%	31	22	63.20
EDUCATION				
Less than high school (212)	75%	19	6	48.18
High school graduate (948)	36%	37	27	68.88
College (497)	16%	32	52	81.13
REGION				
Northeast (419)	33%	35	32	70.18
North Central (463)	35%	30	35	69.95
South (519)	42%	32	26	65.69
West (263)	31%	33	36	73.23
SEX				
Female (1,298)	35%	32	33	65.03
Male (366)	43%	32	25	70.25
RACE				
White/other (1,485)	34%	32	34	70.34
Black (177)	53%	33	14	60.83
SOCIOECONOMIC STATUS				
Low (545)	56%	30	14	58.92
Middle (600)	28%	37	35	72.02
High (519)	22%	30	48	78.40

Example of how to read table: 26% of the 18-34 age group fall in the low category of the nutrition knowledge score.

*Standard Deviation = 22.83

A discussion of the individual components of the nutrition knowledge score begins with this page and ends on page 16.

3. KNOWLEDGE ABOUT NUTRIENTS

Shoppers were handed a card listing ten nutrients and asked for each whether it is easy to get (either because it is found in many foods, or because commonly used foods have a lot of it), or hard to get. They were also asked whether or not the body stores that nutrient. Understanding of the ease with which nutrients are obtained and how the body handles them is uneven.

At least three shoppers in ten believe each of the nutrients studied is easy to get from one's regular diet. Protein (77%), carbohydrates (87%) and fat (93%) are correctly answered as easy to get by the majority of shoppers. However, only 36% of shoppers name thiamin as a nutrient that is easy to get, and 30% name riboflavin. From 46% to 80% of shoppers incorrectly believe that vitamin A, iron, vitamin D, and calcium are easily obtainable nutrients.

Iron (37%) is most often correctly named as hard to get.

Majorities of shoppers know that calcium (59%) and fat (88%) are stored by the body, but 65% of shoppers incorrectly also believe that carbohydrates are stored.

Table 4

Knowledge of Nutrients

(base: All food shoppers - 1,664)

	<u>Easy to get from regular diet</u>	<u>Hard to get from regular diet</u>	<u>Body stores</u>	<u>Body does not store</u>
Fat	<u>93%</u>	2	<u>88%</u>	4
Carbohydrates	<u>87%</u>	2	65%	<u>14</u>
Vitamin C	80%	12	25%	<u>55</u>
Protein	<u>77%</u>	13	36%	<u>40</u>
Calcium	73%	<u>14</u>	<u>59%</u>	20
Vitamin D	56%	<u>15</u>	<u>26%</u>	34
Iron	52%	<u>37</u>	<u>40%</u>	38
Vitamin A	46%	20	<u>23%</u>	34
Thiamin (Vitamin B ₁)	<u>36%</u>	27	19%	<u>36</u>
Riboflavin (Vitamin B ₂)	<u>30%</u>	28	16%	<u>33</u>

(Not sure, no answer not shown)

Note: Selection of underscored items contributes to total score on nutrition knowledge quiz. Of the possible 134 points in the knowledge score, this series accounts for 18 points.

4. KNOWLEDGE ABOUT THE FOUR MAIN FOOD GROUPS

The final series of questions on nutrition knowledge asked food shoppers about representatives of each of the four food groups. The foods selected to be studied are: milk, beef, tomatoes, and bread.*

The same series of questions was asked about each of the four foods.** Respondents were directed to look at an exhibit card which listed choices for each of the questions.***

Areas studied are:

- The value of the food to the body --
Whether (milk, beef, tomatoes, bread) is important or not for selected functions in the body.
- Nutrition elements --
Whether or not (milk, beef, tomatoes, bread) is a particularly good source of selected nutrients.
- Substitute foods --
Which other foods (listed on a card) have a lot of the same benefits to the body that (milk, beef, tomatoes, bread) has.

*In 1973 the four foods asked about were milk, beef, green peas, and bread.

**Of the possible 134 points in the knowledge score, this food group series accounts for 116 points.

***Respondents were reassured at the start of this series that "Even the experts disagree about the answers," so that they would not feel self-conscious about answering a series of "knowledge" type questions.

Majorities of food shoppers are familiar with the nutritional qualities of milk.

At least seven shoppers in ten know that milk is a good source of calcium, protein, fat, and vitamin D. Three-fourths or more of shoppers also know milk contributes to strong teeth and bones and builds body tissues. Majorities also identify cottage cheese, eggs, and peanut butter as foods which could substitute for milk.

Table 5

Knowledge of the Milk Food Group*

(base: All food shoppers - 1,664)

<u>Milk is a Good Source of ...</u>		<u>Milk is Important for ...</u>		<u>Foods Having a Lot of the Same Benefits as Milk</u>	
Calcium	<u>90%</u>	Strong teeth and bones	<u>95%</u>	Cottage cheese	<u>88%</u>
Protein	<u>74%</u>	Building body tissues	<u>77%</u>	Eggs	<u>69%</u>
Fat	<u>73%</u>	Healthy skin	75%	Peanut butter	<u>54%</u>
Vitamin D	<u>70%</u>	Builds blood cells	50%	Fish	<u>44%</u>
Vitamin A	52%	For nervous system	<u>48%</u>	Chicken	<u>40%</u>
Iron	39%	Fights infections	34%	Carrots	34%
Carbohydrates	38%	For the eyes	30%	Oranges	30%
Thiamin (B ₁)	34%			Broccoli	25%
Vitamin C	28%			Rice	24%
Riboflavin (B ₂)	<u>28%</u>			White potatoes	23%
				Macaroni	20%
				Pork & beans	<u>22%</u>

* Underscored items are correct, therefore, selection contributes to total score.

For ease of reporting, only the positive answer categories are shown. The negative responses and not sure are omitted. See separately bound Detailed Tabulations for complete data.

Beef is seen as a good source of protein, fat, and iron, and as a blood cell and body tissue builder.

Majorities of shoppers correctly identify protein, fat and iron as component elements of beef, and attribute the building of body tissues and blood cells to beef. However, over half incorrectly believe beef contributes to strong teeth and bones. All of the foods with animal protein are correctly mentioned by about half of shoppers as substitutes for beef. Many shoppers also recognize the vegetable protein in peanut butter and pork and beans as substitutes.

Table 6

Knowledge of the Meat Food Group: Beef *

(base: All food shoppers - 1,664)

<u>Beef is a Good Source of ...</u>		<u>Beef is Important for ...</u>		<u>Foods Having a Lot of the Same Benefits as Beef</u>	
Protein	<u>90%</u>	Building body tissues	<u>86%</u>	Chicken	<u>73%</u>
Fat	<u>78%</u>	Builds blood cells	<u>85%</u>	Eggs	<u>70%</u>
Iron	<u>69%</u>	Strong teeth and bones	59%	Fish	<u>67%</u>
Carbohydrates	37%	For healthy skin	47%	Peanut butter	<u>66%</u>
Thiamin (B ₁)	37%	For nervous system	44%	Cottage cheese	<u>53%</u>
Riboflavin (B ₂)	34%	Fights infections	44%	Pork & beans	<u>46%</u>
Calcium	30%	For the eyes	29%	Carrots	24%
Vitamin A	29%			Broccoli	21%
Vitamin D	25%			Rice	19%
Vitamin C	16%			Macaroni	15%
				White potatoes	15%
				Oranges	14%

* Underscored items are correct, therefore, selection contributes to total score.

Shoppers know that tomatoes contain vitamin C, but are unsure of their value to the body.

Seven shoppers in ten know that vitamin C is contained in tomatoes. Only four in ten correctly cite vitamin A as one of tomatoes' nutritional elements. Over six shoppers in ten also know that oranges and carrots are substitute foods for tomatoes, but less than four in ten know that tomatoes contribute to healthy skin, fight infection, and aid the eyes.

Table 7

Knowledge of the Fruit/Vegetable Food Group: Tomatoes *

(base: All food shoppers - 1,664)

<u>Tomatoes are a Good Source of ...</u>		<u>Tomatoes are Important for ...</u>		<u>Foods Having a Lot of the Same Benefits as Tomatoes</u>	
Vitamin C	<u>70%</u>	Building body tissues	38%	Oranges	<u>69%</u>
Vitamin A	<u>42%</u>	Builds blood cells	38%	Carrots	<u>62%</u>
Vitamin D	31%	For healthy skin	<u>37%</u>	Broccoli	<u>54%</u>
Iron	26%	Fights infections	<u>36%</u>	White potatoes	<u>22%</u>
Thiamin (B ₁)	22%	For the eyes	<u>27%</u>	Eggs	18%
Carbohydrates	20%	For nervous system	24%	Cottage cheese	18%
Riboflavin (B ₂)	20%	Strong teeth and bones	23%	Pork & beans	16%
Protein	19%			Peanut butter	16%
Calcium	13%			Fish	12%
Fat	4%			Chicken	12%
				Rice	10%
				Macaroni	8%

* Underscored items are correct, therefore, selection contributes to total score.

Enriched bread is seen as a source of carbohydrates and B vitamins, and rice, potatoes and macaroni are named as substitute foods.

Seven shoppers in ten know that enriched bread is a source of carbohydrates, and over half name thiamin and riboflavin as elements contained in enriched bread. A majority correctly believes that bread is good for building body tissues but a majority incorrectly thinks bread is important for strong teeth and bones. Foods named as substitutes by a majority of shoppers are macaroni, white potatoes, and rice.

Table 8

Knowledge of the Grain Food Group: Enriched Bread *

(base: All food shoppers - 1,664)

<u>Bread is a Good Source of ...</u>	<u>Bread is Important for ...</u>	<u>Foods Having a Lot of the Same Benefits as Bread</u>
Carbohydrates <u>70%</u>	Building body tissues <u>60%</u>	Macaroni <u>78%</u>
Thiamin (B ₁) <u>59%</u>	Strong teeth and bones 52%	White potatoes <u>78%</u>
Riboflavin (B ₂) <u>56%</u>	Builds blood cells <u>39%</u>	Rice <u>75%</u>
Fat 55%	For healthy skin 35%	Peanut butter 35%
Protein 50%	For nervous system <u>28%</u>	Pork & beans 34%
Vitamin A 44%	For the eyes 24%	Eggs 34%
Vitamin D 42%	Fights infections 23%	Cottage cheese 32%
Calcium 41%		Fish 24%
Iron <u>39%</u>		Chicken 23%
Vitamin C 25%		Carrots 20%
		Broccoli 14%
		Oranges 12%

* Underscored items are correct, therefore, selection contributes to total score.

CHAPTER SUMMARY

1. When rating their own nutrition knowledge, a third of shoppers (33%) see themselves as knowing "a lot" or "quite a bit" about nutrition; 38% say they know "some" about nutrition, and 26% rate themselves as knowing "not too much" or "almost nothing" about nutrition. In general, shoppers seem to have a realistic concept of their nutrition knowledge. Nevertheless, 18% of those who score low on a nutrition knowledge quiz, mistakenly think their knowledge is high.
2. Regarding actual nutrition knowledge, as measured by a nutrition quiz, younger shoppers, those with college experience, women, and non-blacks score highest on the items which comprise the nutrition knowledge score.
3. When handed a list and asked to name those nutrients which are easy to get from a regular diet, at least three shoppers in ten select each item as easy to get.

A second part of this question asked shoppers which nutrients the body stores. About a fourth or more correctly name vitamin A, iron, vitamin D, calcium, and fat. Other nutrients are incorrectly named as stored by the body by anywhere from 16% (riboflavin) to 65% (carbohydrates) of shoppers.

4. In a section devoted to the four main food groups, the following are selected by at least a majority of shoppers. (The items in parentheses are not scored as correct answers.)

<u>Food</u>	<u>Nutrition Elements</u>	<u>Value to the Body</u>	<u>Substitute Foods</u>
MILK	Calcium Protein Fat Vitamin D (Vitamin A)	Strong teeth and bones Building body tissues (Healthy skin)	Cottage cheese Eggs Peanut butter
BEEF	Protein Fat Iron	Building body tissues Builds blood cells (Strong teeth and bones)	Chicken Eggs Fish Peanut butter Cottage cheese
TOMATOES	Vitamin C	(No items in this category -- either correct or in- correct -- are selected by a majority of shoppers)	Oranges Carrots Broccoli
ENRICHED BREAD	Carbohydrates Thiamin Riboflavin (Fat)	Building body tissues (Strong teeth and bones)	Macaroni White potatoes Rice

II.

Opinions about Food and Nutrition

- Beliefs about Food and Nutrition
- Effect of Interview Experience

1. BELIEFS ABOUT FOOD AND NUTRITION

In addition to determining shoppers' factual knowledge in the nutrition area, they were asked a series of questions regarding nutrition beliefs.

Among the food and nutrition beliefs studied, at least four food shoppers in ten believe that: *

- Added vitamins do not supply the same benefit as natural vitamins. (incorrect)
- Vegetarians can stay healthy. (depends)
- Snacks are never as good for you as a regular meal. (depends or incorrect)
- Eating a variety of foods from the supermarket can supply sufficient nutrition. (depends or incorrect)

A fourth or less of food shoppers incorrectly believe that:

- Weighing the right amount means you are properly nourished.
- You will get sufficient nourishment if you just eat what you like.
- Any food sold in the supermarket is good for you.

About one-fifth of the food shoppers (18%) believe that a canned or frozen vegetable can be just as nutritious as a fresh vegetable cooked yourself.

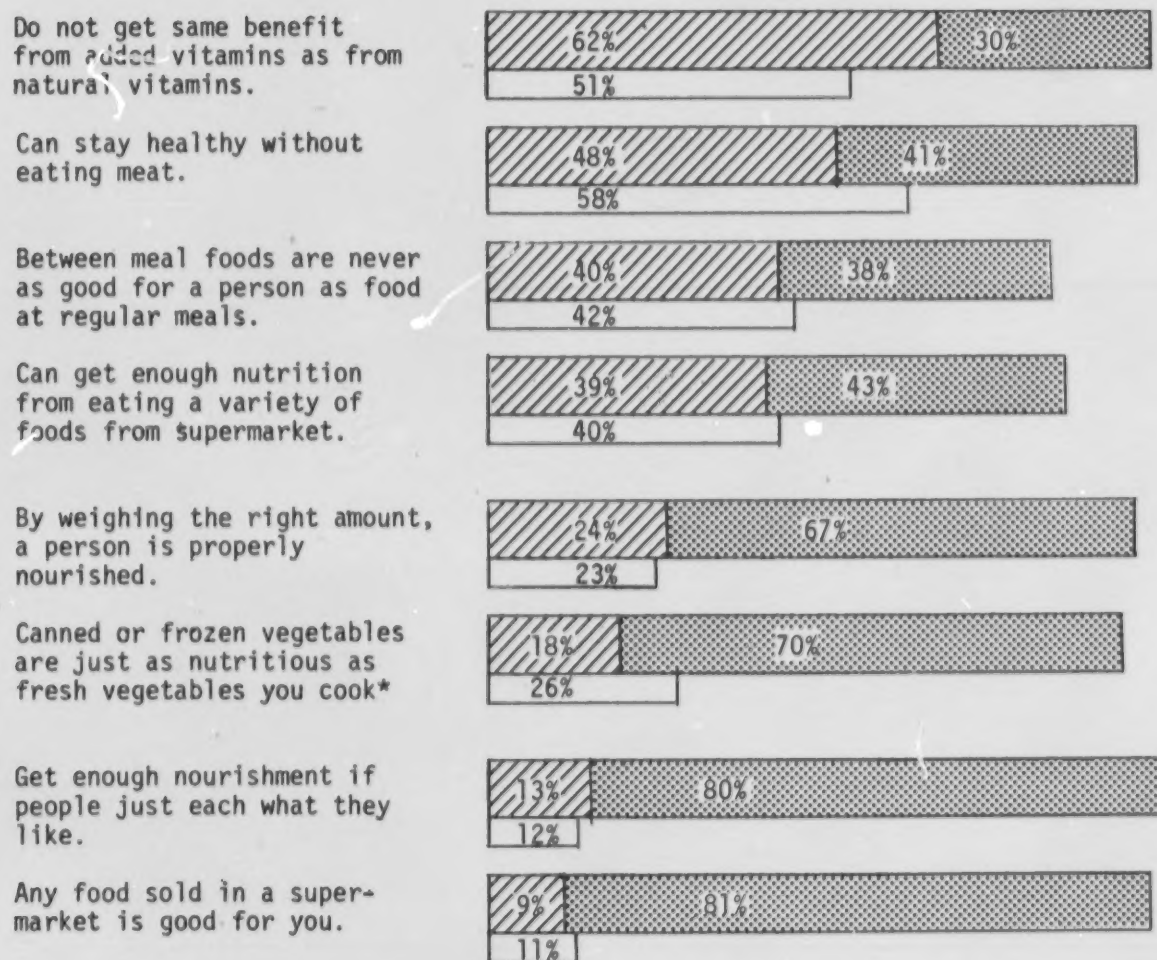
These questions are studied in more detail on the following pages.

* Scoring of statements by nutrition consultants in parentheses.

Figure 1

Beliefs about Food and Nutrition

(base: All 1975 food shoppers - 1,664;
all 1973 food shoppers - 1,500)



(Depends, not sure omitted)

Agree



Disagree



Agree 1973



*In 1973 the question wording asked about "canned or frozen food" compared with "food made from scratch"

A food beliefs index was developed, which divides shoppers into two groups: "not well informed" and "well informed." As is true with the nutrition knowledge score, shoppers were divided into equal groups for analysis purposes, so that overall approximately half the shoppers are in the "not well informed" group and half are in the "well informed" group. When examining subgroups of shoppers, differences in how they are distributed in the two groups do occur.

The index was developed as follows:

	<u>% of Shoppers</u>
1 point -- "disagree" or "depends" response to: Get enough nourishment if people just eat what they like.	85%
1 point -- "disagree" with: Any food from the supermarket is good for you.	81%
1 point -- "disagree" or "depends" response to: Between meal foods are never as good for a person as food at regular meals.	57%
1 point -- "disagree" with: By weighing the right amount a person is properly nourished.	67%
1 point -- "disagree" or "depends" response to: Canned or frozen vegetables are just as nutritious as fresh vegetables you cook.	77%
1 point -- a "yes" response to: Is added Vitamin C as beneficial as fresh Vitamin C?	30%

Shoppers with 0-3 points were placed in the "not well informed" group; those with 4-6 points were put in the "well informed" group.

As shown in the table opposite, the following shoppers are more likely to be in the "not well informed" group:

- 50 years and older (59%)
- Black (63%)
- Live in the South (59%)
- Lower socioeconomic groups (50% medium, 68% low)
- Lower nutrition knowledge (52% moderate, 65% low)

Table 9
Food Beliefs Index

	<u>Not Well Informed</u>	<u>Well Informed</u>
All food shoppers (1,664)	51%	49
AGE		
18-34 (659)	43%	57
35 - 49 (561)	47%	53
50 + (433)	59%	41
REGION		
Northeast (419)	47%	53
North Central (463)	48%	52
South (519)	59%	41
West (263)	45%	55
SOCIOECONOMIC STATUS		
Low (545)	68%	32
Middle (600)	50%	50
High (519)	31%	69
RACE		
White/other (1,485)	49%	51
Black (177)	63%	37
NUTRITION KNOWLEDGE		
Low (545)	65%	35
Moderate (542)	52%	48
High (567)	33%	67

The majority of food shoppers believe that natural vitamins provide more nutritional benefit than added vitamins.

Six food shoppers in ten (62%) believe that vitamin C added to a fruit drink is less beneficial than the same amount of vitamin C in fresh oranges or grapefruit. Three food shoppers in ten believe the same benefit is derived from both added and natural vitamin C.

Food shoppers in the high socioeconomic group (39%), and those who score high on the knowledge quiz (38%), are more likely than others to believe that vitamin C from either source is equivalent.

Table 10

Is Added Vitamin C as Beneficial as Natural Vitamin C?

All food shoppers (1,664)

Yes	30%
No	62
Depends	2
Don't know	7

Since the last survey there has been an increase in the percent of food shoppers who believe that vitamin C which is added to a product does not provide the same benefit as vitamin C found in fresh citrus fruit.

1973 food shoppers (1,500)

34% said "yes," vitamin C
from either source
gives same benefit

51% said "no"

About half of food shoppers believe a person can stay healthy without eating any meat, poultry or fish.

Nevertheless, almost as many shoppers feel that vegetarians cannot stay healthy without eating "meat."

Those shoppers who are more likely to think that people cannot stay healthy without eating meat, poultry or fish, are in the lower socioeconomic group (51%), live in the South (52%), are black (59%), and have less than a high school education (58%).

Table 11

Can People Stay Healthy without Eating Meat, Poultry or Fish?

	<u>All food shoppers</u> base: (1,664)
Yes, can stay healthy	48%
No, cannot stay healthy	41
Depends	8
No opinion	3

Since the 1973 survey, there has been a decrease in the proportion of food shoppers who believe that a person does not have to consume meat, poultry or fish in order to stay healthy.*

1973 food shoppers (1,500)

58% said "yes," can stay healthy without meat, poultry or fish

34% said "no," cannot

*Note: The "depends" category was not included on the questionnaire in the 1973 survey. This may, in part, account for the differences between surveys. In 1975, this category (and the "no opinion" category) was on the questionnaire, but was not read to the respondent.

Food shoppers are divided on the nutritional value of snacks: four in ten believe snacks are never as good for you as regular meals; about the same proportion disagrees.

The word "snacks" was not used in the question wording, but suggested by the phrase "the food that you eat between meals." Shoppers are divided on the worth of snacks, even though the type of foods eaten between meals is not defined by the question. A fifth of shoppers (19%) do say, however, that it "depends."

Table 12

Between Meal Foods are Never as Good for a Person
as Foods at Regular Meals.

	<u>All food shoppers</u>
base:	(1,664)
Agree	40%
Disagree	38
Depends	19
Not sure	3

Food shoppers who most frequently disagree with the statement tend to be in the higher socioeconomic group (49%) and high nutrition knowledge group (47%).

Shoppers are also divided on the issue of food "variety" being equated with "nutrition."

About four shoppers in ten believe that eating a variety of supermarket food will supply sufficient nutrition, and the same proportion disagrees.

Respondents age 50 and over (45%), and those with less than a high school education (46%), are the most frequently in agreement with the statement.

Table 13

Can Get Enough Nutrition from Eating a Variety of Foods from the Supermarket

	<u>All food shoppers</u>
base:	(1,664)
Agree	39%
Disagree	43
Depends	15
Not sure	3

On neither of these two statements (Tables 12 and 13) is there significant difference from the data reported in the previous survey.

Two-thirds of food shoppers do not believe that simply weighing the right amount indicates that you are properly nourished; however, almost one-fourth do.

Certain groups of shoppers are more likely than others to believe that correct weight and proper nourishment are correlated: those over 50 (34%), those in the lower socioeconomic group (36%), and those who score in the lower groups on the nutrition knowledge quiz (32% low group, 27% moderate group).

Table 14

By Weighing the Right Amount, a Person is Properly Nourished.

	<u>All food shoppers</u>
base:	(1,664)
Agree	23%
Disagree	67
Depends	5
Not sure	5

Again, there are no significant differences in results between the two surveys on this issue.

seven food shoppers in ten believe that fresh vegetables provide more nutrition than canned or frozen vegetables.

Only about a fifth of shoppers (18%) believe that packaged vegetables provide nourishment equivalent to that in fresh vegetables cooked at home, and just under one in ten (7%) say it "depends."

There is little difference among the various subgroups of shoppers on this issue -- a majority of all the groups studied felt that fresh vegetables you cook yourself are more nourishing than frozen or canned vegetables.

Table 15

Canned or Frozen Vegetables Are as Nutritious as Fresh Vegetables.

	<u>All food shoppers</u>
base:	(1,664)
Agree	18%
Disagree	71
Depends	7
Not sure	4

While there has been an increase in "disagreement" since the previous study, because of the change in question wording we do not believe the questions can be directly compared.

Few food shoppers believe you can maintain proper nourishment by just eating foods that you like.

Thirteen percent of food shoppers believe this is an effective method of getting proper nourishment, but 81% disagree. Again, there is widespread disagreement with this statement among all subgroups. The proportion who agree rises, however, among the older shoppers (18%), those in the lower socioeconomic group (20%), and those who score lowest on nutrition knowledge (21%).

Table 16

Most People Can Get Enough Nourishment if They Just Eat What They Like.

	<u>All food shoppers</u>
base:	(1,664)
Agree	13%
Disagree	81
Depends	4
Not sure	2

Eight food shoppers in ten do not believe that any food sold in a supermarket is "good for you."

However, one food shopper in ten (9%) does believe that any food sold in a supermarket is "good for you," and among respondents with less than a high school education, this belief is held by a fifth (20%) of the group.

Table 17

Any Food From a Supermarket is Good For You.

	<u>All food shoppers</u>
base:	(1,664)
Agree	9%
Disagree	81
Depends	7
Not sure	3

On neither of these two beliefs is there a change from the results obtained in the 1973 study.

2. INTERVIEW EFFECT

Toward the end of the interview, respondents were asked to estimate the effect participation in the survey might have on them. Over half (56%) say they will not do anything different in their food-related roles.*

Four shoppers in ten (39%), however, say that as a result of the interview experience they will change their shopping, cooking, and serving behavior in some way. The shoppers were asked to explain what they might do differently, and the results are shown below.

Table 18

Effect of Participating in Interview on Shopping, Cooking,
Serving Food

	<u>All food shoppers</u> <u>1975</u>
base:	(1,664)
<u>Will not</u> do anything different	56%
Will do something different	<u>39</u>
Pay closer attention to labels	26
Pay more attention to nutrition	12
Other	4
Don't know	1
Not sure, don't know	5

(Multiple responses)

Younger shoppers (44% under 35 vs. 33% over 50) are more likely to say they will change their behavior as a result of the interview, as are shoppers in the higher socioeconomic groups (35% low vs. 43% high) and those who are rated as the most careful shoppers already (28% low score vs. 42% high). About the same proportion (51%) said they would not do something different after participating in the 1973 survey.

*The primary reason for asking this question is to determine the extent to which the interview experience is an opinion-forming one as opposed to an opinion-eliciting one. That is, the more the interview "teaches," the more likely respondents would be to say their behavior will change as a consequence of the experience. The less committed people are to a subject area at the time of the interview, or the less certain they are about their own behavior at the time of the interview, the more likely they will be changed (or say they will change) as a result of the experience.

CHAPTER SUMMARY

1. Shoppers were asked eight "belief" questions about food and nutrition. About half or more of shoppers believe:
 - People do not get the same benefit from added vitamins as from natural vitamins (62%).
 - A person can stay healthy without eating meat, poultry or fish (48%).
2. Other beliefs about food and nutrition which are held by at least or almost a fourth of shoppers are:
 - Between meal foods are never as good for a person as foods at regular meals (40%).
 - A person can get enough nutrition from eating a variety of foods from the supermarket (39%).
 - By weighing the right amount, a person is properly nourished (23%).

Less widely held beliefs include:

- Canned or frozen vegetables are just as nutritious as fresh vegetables you cook (18%).
 - People can get enough nourishment if they just eat what they like (13%).
 - Any food sold in a supermarket is good for you (9%).
3. A food beliefs index shows that the least well informed shoppers are:
 - At least 50 years old; black; those living in the South; those in the lower socioeconomic groups; and those with the least amount of nutrition knowledge.

III.

Nutrition Labeling and Open Dating

- Awareness of and Experience with Nutrition Labeling
- Understanding of Nutrition Labeling
- Perceived Benefits of Nutrition Labels
- Evaluation of Nutrition Labels
- Open Dating

1. A SECOND LOOK AT NUTRITION LABELING

One of the main objectives of the 1973 survey of food shoppers was to obtain baseline measurement of consumer attitudes toward the information presented in nutrition labels. The first measure was taken before the use of nutrition labeling was widespread. Therefore, the sample label shown to them in the interview was probably the first glimpse many of the shoppers had of nutrition labels.

The current survey again measures food shoppers' reactions to nutrition labeling, but after they have had more of a chance to become familiar with the labels and the information presented on them through ordinary day-to-day shopping experiences. In addition, we understand that there has been an FDA-sponsored advertising program taking place over the last year or so which is intended to make consumers more familiar with the labels and how to make use of the information on them.

As was true in the 1973 study, a prototype of a nutrition label was shown to respondents when they were questioned about nutrition labeling. A copy of this is shown on the page opposite.

Sample Label*

NUTRITION INFORMATION**Per Serving**

Serving size = 8 oz.

Servings per container = 2

Calories	560
Protein	23 g
Carbohydrate	43 g
Fat	33 g
(Percent of Calories from fat = 53%)	
Polyunsaturated*	22 g
Saturated	9 g
Cholesterol* (20 mg/100 g)	40 mg
Sodium (365 mg/100 g)	810 mg

Percentage of U.S. Recommended Daily
Allowances (U.S. RDA)

Protein	35	Niacin	25
Vitamin A	35	Calcium	2
Vitamin C	10	Iron	25
Thiamin	15	Vitamin B₆	20
Riboflavin	15	Vitamin B₁₂	15

*Information on fat and cholesterol content is provided for individuals who, on the advice of a physician, are modifying their total dietary intake of fat and cholesterol.

*Reduced size. A copy of the exhibit card used in the interview is bound into the Appendix to this report.

2. FAMILIARITY WITH NUTRITION LABELING

In the baseline study it was not expected that shoppers would have some prior knowledge of and experience with nutrition labeling. However, in the time that has elapsed between surveys, there has been more and more opportunity for food shoppers to become aware of, and possibly make use of, nutrition labeling.

Awareness of Nutrition Labeling

As the table opposite indicates, about six in ten food shoppers say they have noticed nutrition labels on food products. The level of awareness of these labels varies considerably among various population groups, however. Those shoppers who are younger, in the higher socioeconomic groups, with higher nutrition knowledge scores and who have a high "careful shopper" score, are more likely to have seen nutrition labeling on foods. Those least likely to have seen nutrition labeling by the summer of 1975 are:

- older
- in the lowest socioeconomic group
- in the South
- low scorers on nutrition knowledge and on "careful shopper."*

*See page 80 for a complete description of the score.

Table 19
Awareness of Foods with Nutrition Labeling

	<u>Yes, have noticed</u>	<u>No, have not noticed</u>
All food shoppers (1,664)	58%	38
AGE		
18 - 34 (659)	72%	26
35 - 49 (561)	63%	32
50 + (433)	45%	52
REGION		
Northeast (419)	61%	36
North Central (463)	64%	33
South (519)	50%	47
West (263)	59%	37
SOCIOECONOMIC STATUS		
Low (545)	45%	51
Middle (600)	64%	34
High (519)	68%	28
NUTRITION KNOWLEDGE		
Low (555)	43%	52
Moderate (542)	60%	38
High (567)	75%	23
CAREFUL SHOPPER SCORE		
Low (355)	26%	70
Medium (834)	58%	38
High (475)	85%	14

(Not sure, no answer not shown)

Experience with Nutrition Labeling

Those shoppers who said they had seen foods with nutrition labels were asked if they had made use of the labels in choosing some of the foods or beverages they buy.

A third of all food shoppers say they have made use of nutrition labels in choosing foods or beverages. This figure represents slightly over half of those who say they have seen nutrition labels.

At least four in ten shoppers from the following subgroups say they have made use of nutrition labeling:

- under age 35
- high socioeconomic group
- high nutrition knowledge score
- high "careful shopper" score*

A fourth or less of these groups have used nutrition labeling:

- age 50 and older
- low socioeconomic group
- low nutrition knowledge score
- medium or low "careful shopper" score

*In fact, a large majority (71%) of this group reports using nutrition labeling. See page 81 for characteristics of those shoppers falling in the three groups -- high, medium, low.

Table 20

Use of Nutrition Labeling

(Asked only of those who said they had noticed foods with nutrition labels.)

	<u>Percent asked question.</u>	<u>Have used</u>	<u>Have not used</u>
All food shoppers (1,664)	58%	33	25
AGE			
18 - 34 (659)	72%	43	29
35 - 49 (561)	63%	32	30
50 + (433)	45%	25	19
REGION			
Northeast (419)	61%	32	28
North Central (463)	64%	36	27
South (519)	50%	28	22
West (263)	59%	37	21
SOCIOECONOMIC STATUS			
Low (545)	45%	24	20
Middle (600)	64%	35	28
High (519)	68%	40	27
NUTRITION KNOWLEDGE			
Low (555)	43%	22	20
Moderate (542)	60%	33	25
High (567)	75%	45	30
CAREFUL SHOPPER SCORE			
Low (355)	26%	3	22
Moderate (834)	58%	24	33
High (475)	85%	71	12

(Not sure, no answer not shown)

Shoppers report using nutrition labeling on a variety of foods and beverages.

Those shoppers who said they had made use of nutrition labeling were asked on which kinds of foods and beverages they had made use of the labels. The table below shows the most frequently mentioned type of food is grain products, with various kinds of beverages a close second

Table 21

Foods and Beverages for Which Nutrition Labels Have Been Used

(Asked only of those who said they had used nutrition labeling.)

	All food shoppers	Nutrition Knowledge Score			Careful Shopper Score		
		Low	Moderate	High	Low	Medium	High
base:	(1,664)	(555)	(542)	(567)	(355)	(834)	(475)
Percent asked this question:	33%	22%	33%	45%	3%	24%	71%
GRAIN PRODUCTS (bread, cereal, pasta, rice, crackers)	14%	9%	14%	21%	2%	11%	30%
BEVERAGES (juices, soft drinks, ice tea)	10	6	10	14	1	7	21
VEGETABLES	7	4	9	9	*	6	14
OTHER FROZEN, PACKAGED, PREPARED FOODS (pudding, canned goods, instant potatoes, etc.)	7	4	8	10	*	5	15
FRUITS	5	3	4	8	*	4	10
MILK AND MILK PRODUCTS (milk, cheese, ice cream, etc.)	5	4	4	6	1	4	10

(Main mentions and multiple answers)

*Less than .5%.

As another measure of shoppers' familiarity with nutrition labeling, they were asked if they had ever seen or heard any ads about nutrition labeling, either in newspapers or magazines, or on television or radio.

Almost six shoppers in ten say they have seen or heard advertising for nutrition labeling. Again, it is those shoppers who are in the higher socioeconomic groups, have higher nutrition knowledge and score higher on the "careful shopper" score who are most likely to have seen or heard these ads.

Table 22

Awareness of Nutrition Labeling Advertising

	<u>Yes, have seen or heard</u>	<u>No, have not</u>
All food shoppers (1,664)	57%	39
SOCIOECONOMIC STATUS		
Low (545)	49%	48
Middle (600)	63%	34
High (519)	60%	36
NUTRITION KNOWLEDGE		
Low (555)	48%	47
Moderate (542)	60%	37
High (567)	65%	33
CAREFUL SHOPPER		
Low (355)	34%	61
Medium (834)	59%	37
High (475)	72%	26

(Not sure, no answer not shown)

3. UNDERSTANDING OF NUTRITION LABELS

After shoppers told us about their familiarity and experience with nutrition labeling, they were asked to look at individual parts of the sample nutrition label in terms of their understanding of them.

While the entire sample label was still in front of them, shoppers were handed eight small cards which displayed various segments of the information presented on the label. They were then instructed to sort the cards on a board according to whether or not they understood the information well enough to use it in making buying decisions.

As shown in the table opposite, shoppers did make distinctions among the parts of the label in terms of their understanding. Most shoppers say they understand "serving size" or "servings per container" and "calorie content" well enough to help them make a buying decision. All other parts of the label, with one exception, were reported to be understood by at least half of the shoppers. Sodium content is understood by only 36% of the shoppers. More detail on what is not understood about the items is reported later.

Table 23

Understanding of Information on Nutrition Label

	<u>All Food Shoppers (1,664)</u>	
	<u>Understand</u>	<u>Do not understand</u>
Serving size or servings per container	85%	12
Calorie content	82%	15
U.S. RDA	64%	31
Protein content (grams)	62%	33
Information on fat	58%	38
Carbohydrate content	56%	40
Cholesterol content	51%	43
Sodium content	36%	58

(Not sure, no answer not shown)

An index was developed based on the questions just reported, which provides an overview of shoppers' understanding of the nutrition label:

One point was given for each segment of the label which the shopper says she (or he) understands well enough to use in making buying decisions. Shoppers are grouped into three groups -- high, moderate and low according to how many parts of the label they reported as being understood.

0-3 Low understanding

4-6 Moderate understanding

7-8 High understanding

As shown in the table opposite, less than half of any of the subgroups of shoppers has a "high" understanding of the nutrition label. Even among the shoppers who score high on the "careful shopper" score, only 45% indicate a good understanding of the information on the label.

As is true with many of the other knowledge or information type questions covered in this survey, those with the least amount of understanding of the nutrition information presented on the labels are:

- Older shoppers
- Shoppers in the lowest socioeconomic group
- Shoppers with the least amount of nutrition knowledge
- Low careful shoppers

Table 24

Nutrition Label Understanding Index

	<u>Low</u>	<u>Moderate</u>	<u>High</u>
All food shoppers (1,664)	31%	35	34
AGE			
18 - 34 (659)	26%	42	32
35 - 49 (561)	27%	36	37
50 + (433)	37%	29	34
SOCIOECONOMIC STATUS			
Low (545)	43%	33	24
Middle (600)	27%	38	35
High (519)	21%	34	45
NUTRITION KNOWLEDGE			
Low (555)	47%	32	21
Moderate (542)	23%	37	40
High (567)	21%	36	43
CAREFUL SHOPPER			
Low (355)	49%	29	22
Moderate (834)	30%	38	33
High (475)	19%	36	45

As mentioned before, shoppers were asked to pinpoint what it was about the information presented that they did not understand. For the most part, shoppers say that it is either the numbers associated with the item they do not understand, or that none of it is clear to them.

Note: See page 37 for a prototype of a nutrition label.

Table 25

Reasons Why Nutrition Label Information Not Understood

(Asked only about those items not understood.)

	Percent asked question	<u>All food shoppers (1,664)</u>			
		<u>Do not understand:</u>			
		<u>What numbers stand for</u>	<u>Meaning of words</u>	<u>Other</u>	<u>None of it clear</u>
Sodium content	58%	19%	8	2	25
Cholesterol content	43%	18%	4	2	18
Carbohydrate content	40%	17%	4	1	15
Information on fat	38%	14%	4	1	15
Protein content (grams)	33%	16%	2	1	12
U.S. RDA	31%	8%	3	2	15
Calorie content	15%	4%	1	*	7
Serving size or servings per container	12%	2%	1	*	7

(Not sure, no answer not shown)

*Less than .5%.

Many shoppers are apparently confused as to the meaning of the RDA figures shown on nutrition labels.

After looking at the sample nutrition label and answering a series of questions about it as just described, shoppers were shown a list of three possible meanings of the RDA section of the label and asked which best describes what "U.S. RDA" stands for.

About a fourth of the shoppers (26%) chose the correct statement to describe the meaning of U.S. RDA's -- "the percent of each vitamin and mineral provided by each serving in the container." Over four shoppers in ten believe the U.S. RDA figures on the label stand for the "percent of each vitamin and mineral needed each day."

Cautionary note to reader:

In examining the findings for this question among subgroups of shoppers, one can see that those shoppers who might be expected to select the correct meaning for "U.S. RDA" (see opposite) are even more likely than others to appear to be misinformed on this issue. This suggests that perhaps the question itself was misinterpreted by respondents. For example, those shoppers who selected "Percent of each vitamin and mineral needed each day" as the correct meaning may have been thinking of the general meaning of "U.S. RDA" rather than the meaning of the U.S. RDA figures shown on the nutrition label.

Table 26

Understanding of U.S. Recommended Daily Allowance Information

	All food shoppers base:	Nutrition Knowledge			Reported Understanding of RDA*	
		Low	Moderate	High	Yes	No
	(1,664)	(555)	(542)	(567)	(1103)	(491)
Percent of each vitamin and mineral needed each day	43%	38%	42%	50%	48%	37%
Percent of each vitamin and mineral provided by each serving in the container	26	21	27	29	30	18
Percent of each vitamin and mineral in the container	16	12	21	15	17	16
Other	1	1	1	1	1	2
Don't know	14	28	9	5	4	27

*Based on responses to Q. 41. "Yes" answers are those who say they understand U.S. RDA information on nutrition labels well enough to help make buying decisions about food products.

Some confusion exists among food shoppers as to the meaning of open dating -- at least with regard to the dates which are stamped on milk.

Shoppers are fairly evenly divided as to the meaning of the date which is stamped on milk -- some think it is the date by which customers should use the product; others think (correctly) that it is the date by which the milk should be sold to the customers. Few believe it refers to the product's packaging date.

Shoppers in the high socioeconomic group, and those with high nutrition knowledge scores and "careful shopper" scores more often correctly describe the meaning of the dates on milk.

Table 27

Meaning of Date Stamped on Milk Container

	Date by which milk Should be sold to customer	Should be used by customer	Is packaged by dairy	Not sure
All food shoppers (1,664)	43%	38	7	12
SOCIOECONOMIC STATUS				
Low (545)	33%	39	8	20
Middle (600)	43%	41	8	8
High (519)	56%	32	4	8
NUTRITION KNOWLEDGE				
Low (555)	39%	33	7	21
Moderate (542)	41%	41	9	9
High (567)	51%	39	5	5
CAREFUL SHOPPER SCORE				
Low (355)	31%	32	11	26
Moderate (834)	42%	42	7	9
High (475)	55%	35	4	6

There is much less difference of opinion among food shoppers, however, when expressing their views as to what kind of date they would prefer stamped on milk container.

Over six food shoppers in ten say they would prefer a date on milk which tells them the point by which the milk should be used. About a fourth of shoppers would prefer the current meaning of the date.

Table 28

Preference for Meaning of Date Stamped on Milk Container

	Date by which milk . . .			
	<u>Should be sold to customer</u>	<u>Should be used by customer</u>	<u>Both</u>	<u>No opinion</u>
All food shoppers (1,664)	23%	62	8	7
SOCIOECONOMIC STATUS				
Low (545)	23%	58	8	11
Middle (600)	25%	62	8	5
High (519)	22%	66	8	4
NUTRITION KNOWLEDGE				
Low (555)	23%	58	8	11
Moderate (542)	24%	61	9	6
High (567)	22%	67	8	3
CAREFUL SHOPPER SCORE				
Low (355)	21%	55	10	14
Moderate (834)	23%	64	7	6
High (475)	24%	65	8	3

4. EVALUATION OF NUTRITION LABELING

Uses Made of Nutrition Labeling

Given the option of using the information on nutrition labels either as a shopping aid or as an aid in planning and evaluating individuals' diets, shoppers tend to favor the former.

Shoppers were handed an exhibit card containing four statements and asked to pick which way they would most likely use the information on nutrition labels.

- To help plan a better diet -- at home
 - Roughly add up the nutrients in all the foods eaten by a person in a day and estimate how close the total nutrients eaten come to the 100% U.S. Recommended Daily Allowances.
- To help get the best nutritional buys -- in the store
 - Compare nutritional values of different brands of the same or similar foods, to see what nutrients are in a new product.
- I would use this information another way
- I probably won't be using the information on nutrition labels too much

About four in ten shoppers choose "to help get the best nutritional buys." Almost three in ten would prefer to use the label at home "to help plan a better diet." A fifth of the shoppers say they probably will not be using nutrition labeling too much and this proportion increases among certain sub-groups:

- 50 years and older (29% say they will not use nutrition labeling too much)
- Low socioeconomic group (28%)
- Low nutrition knowledge group (30%)
- Low group on "careful shopper" score (41%)
- Low group in understanding of the label (38%)

Table 29

Primary Use of Nutrition Label Information

	<u>To help get best nutritional buys</u>	<u>To help plan better home diet</u>	<u>Use some other way</u>	<u>Will not use too much</u>
All food shoppers (1,664)	42%	28	3	22
AGE				
18 - 34 (659)	47%	33	2	15
35 - 49 (561)	45%	29	4	19
50 + (433)	37%	24	3	29
SOCIOECONOMIC STATUS				
Low (545)	36%	28	1	28
Middle (600)	44%	29	2	20
High (519)	49%	28	5	16
NUTRITION KNOWLEDGE				
Low (555)	33%	25	2	30
Moderate (542)	45%	32	3	18
High (567)	50%	29	3	16
CAREFUL SHOPPER SCORE				
Low (355)	26%	21	2	41
Moderate (834)	44%	30	2	20
High (475)	52%	32	5	9
UNDERSTANDING OF LABEL				
Low (482)	33%	18	2	38
Moderate (615)	48%	31	2	15
High (567)	45%	34	5	14

(Not sure, no answer not shown)

While shoppers who say they probably won't be using nutrition labeling too much do not focus on any given reason why, the most frequently mentioned reasons seem to suggest a simple lack of interest in applying this new information to established shopping patterns. For instance, some shoppers say they have a pattern of food buying and will not change it regardless of what information is presented on the food labels. Following are some comments which illustrate shoppers' views:

Won't Change Buying/Eating Habits

I'm one of those people who buys what we enjoy eating and never looks at price or reads labels. I know what I like after shopping for ten years.

Because we cook the same things all the time and are used to the same food. We won't change.

Because I don't change my eating habits and don't feel that I would benefit from nutritional labeling. I just see or need something I like and buy and very seldom read the label.

No Interest

Really not interested.

Well, I am alone, and I eat very little and feel I don't need this type of information.

Because I don't pay attention to it.

Don't Understand Them

Because I really can't say I understand it very well.

Too much wording. Too complicated.

I don't understand that much about it.

I've never used it before so I figure it's kind of a bunch of hogwash. It takes a scientist or medical man to be able to understand all those labels.

Table 30

Reasons for Not Using Nutrition Labeling

(Asked only of those who said they probably
would not make much use of label information.)

All food shoppers (1,664)

Percent asked	<u>22%</u>
WON'T CHANGE HABITS (I buy food I'm used to buying; won't be changing my way of buying)	8
NO INTEREST (Not important to me)	5
DON'T UNDERSTAND THEM (Too complicated)	3
TAKES TOO MUCH TIME (Don't have the patience to analyze each detail)	2
NO NEED/ALREADY KNOWLEDGEABLE (I feel I balance my meals now)	2
DON'T BUY FOODS WITH NUTRITIONAL LABELING (Buy fresh meats and produce)	2
NO SPECIAL DIETARY NEEDS	1
CAN GET BALANCED MEALS WITHOUT (Such a variety of foods available you get your normal nutrition anyhow)	1
OTHER	1
NO ANSWER	1

(Multiple answers)

When rating those items on the nutrition label which they understand, shoppers tend to say each of the types of information is at least "important." Very few shoppers say an item is "not important at all." (See table opposite.)

The table below shows the data in a somewhat different manner. Just taking the opinions of those shoppers who say they understand an item again indicates a tendency to rate each as at least "important." In dichotomizing the four point scale, there are only three items which are not rated in the top half of the scale by at least two-thirds of shoppers -- carbohydrate content, serving size and sodium content. Almost three-fourths of those who said they understand the information on protein content value this information.

Table 31

	Base	Importance to those who said they understand the information	
		Very important, important	Somewhat, not at all important
Protein content (grams)	(1032)	73%	26
Calorie content	(1364)	68%	32
Information on fat	(965)	67%	31
Cholesterol content	(849)	66%	32
U.S. RDA	(1065)	65%	32
Carbohydrate content	(932)	61%	38
Serving size or servings per container	(1414)	57%	42
Sodium content	(599)	55%	44

(No opinion, no answer not shown)

Table 32

Importance of Nutrition Label Information in Making
Buying Decisions

(Asked only about those items which are said to be understood.)

	Percent asked question	All food shoppers (1,664)			
		Very important	Important	Somewhat important	Not important at all
Serving size or servings per container	85%	24%	25	21	14
Calorie content	82%	28%	27	16	10
U.S. RDA	64%	20%	22	14	6
Protein content (not RDA)	62%	24%	22	12	5
Information on fat	58%	21%	18	12	6
Carbohydrate content	56%	16%	17	15	6
Cholesterol content	51%	20%	14	11	6
Sodium content	36%	11%	9	9	7

(No opinion, no answer not shown)

Assessing the Nutrition Label

Shoppers were asked to make a comparison between the information presented on a nutrition label and other kinds of information which might be included on food packages: recipes and further information on making a well-balanced meal.

When comparing the value of nutrition information against the value of recipes for using the food product, shoppers favor the nutrition information. About one in six, however, either say they would like both types of information or would prefer recipes.

Once again, it is those who know the most about nutrition, those who are the more "careful" shoppers and those who understand the label best who show a strong preference for nutrition label information.

Table 33

Prefer nutrition labeling, or some recipes for using the food inside the package.

	<u>Nutrition Labeling</u>	<u>Recipes</u>	<u>Both</u>	<u>Neither</u>	<u>No opinion</u>
All food shoppers (1,664)	58%	17	16	4	5
NUTRITION KNOWLEDGE					
Low (555)	46%	21	15	8	10
Moderate (542)	60%	15	19	2	4
High (567)	69%	14	15	1	1
CAREFUL SHOPPER SCORE					
Low (355)	39%	23	11	11	16
Moderate (834)	58	19	18	3	2
High (475)	70	10	16	1	3
UNDERSTANDING OF LABEL					
Low (482)	40%	26	14	9	11
Moderate (615)	61%	17	17	2	3
High (567)	70%	10	16	2	2

When comparing current findings with those from the 1973 study, there tends to be less preference for nutrition information now and more desire for either recipes or for both kinds of information.

1973 food shoppers (1,500)

79% prefer nutrition labeling
9% prefer recipes
6% say both

On the other hand, when the choice is between nutrition information and help in making well-balanced meals using the food product plus other things, support for nutrition labels loses ground among shoppers.

Except for those who score high on the three indices (knowledge, shopping style, label understanding), shoppers are fairly evenly divided as to which type of information they would prefer. The high scorers generally prefer nutrition labeling information.

Table 34

Prefer nutrition information shown on information on what other foods to serve with the one in the package in order to make a well-balanced meal.

	<u>Nutrition labeling</u>	<u>Balanced meal</u>	<u>Both</u>	<u>Neither</u>	<u>No opinion</u>
All food shoppers (1,664)	42%	37	12	4	5
NUTRITION KNOWLEDGE					
Low (555)	31%	36	13	8	12
Moderate (542)	43%	40	12	1	4
High (567)	53%	35	10	1	1
CAREFUL SHOPPER SCORE					
Low (355)	24%	39	10	10	17
Moderate (834)	40%	41	13	3	3
High (475)	58%	29	11	*	2
UNDERSTANDING OF LABEL					
Low (482)	30%	40	10	8	12
Moderate (615)	44%	40	11	2	3
High (567)	50%	31	14	2	3

*Less than .5%

This year's findings on this question differ sharply from 1973 in that there is a substantially smaller proportion of shoppers who say they prefer nutrition label information over aid in balancing meals.

1973 food shoppers (1,500)

64% preferred nutrition labeling
20% preferred balanced meal information
8% wanted both

Many shoppers say that they would make use of the nutrition label information when evaluating a new product for the first time.

Not surprisingly, the higher shoppers score on the three indices most related to their use and understanding of the labeling (knowledge score, "careful shopper" score, and degree to which they understand the label), the more likely they are to say they would make use of the nutrition information to choose a new product.

Table 35

Would you make use of this kind of label as a way to decide about buying this new brand?

	<u>Yes</u>	<u>No</u>	<u>Not Sure</u>
All food shoppers (1,664)	72%	17	11
NUTRITION KNOWLEDGE			
Low (555)	60%	21	19
Moderate (542)	75%	15	10
High (567)	81%	13	6
CAREFUL SHOPPER SCORE			
Low (355)	48%	30	22
Moderate (834)	73%	16	11
High (475)	86%	7	7
UNDERSTANDING OF LABEL			
Low (482)	54%	25	21
Moderate (615)	75%	15	10
High (567)	84%	11	5

A similar proportion of shoppers in 1973 said they would use the nutrition label to help evaluate a new product:

1973 food shoppers (1,500)

75% "yes" would use
15% "no" would not
10% "not sure"

In terms of shoppers' perceptions of the benefits nutrition labeling might have for them, most shoppers see at least some value in the labeling.

While about a fifth of the shoppers either say nutrition labeling will have no benefit for them or have no opinion about it, a third say it will have a little benefit and 45% say they will receive quite a bit of benefit from the labeling.

The more a shopper knows about nutrition, the higher the score on the "careful shopper" index, and the better a shopper understands the labels, the more likely she (or he) is to feel the labeling will be a benefit.

Table 36

Amount of benefit homemaker sees deriving from nutrition labeling.

	<u>Quite a bit</u>	<u>A little</u>	<u>None</u>	<u>No opinion</u>
All food shoppers (1,664)	45%	33	12	10
NUTRITION KNOWLEDGE				
Low (555)	32%	34	19	15
Moderate (542)	50%	33	9	8
High (567)	55%	33	7	5
CAREFUL SHOPPER SCORE				
Low (355)	23%	40	23	14
Moderate (834)	44%	36	11	9
High (475)	64%	25	4	7
UNDERSTANDING OF LABEL				
Low (482)	27%	35	24	14
Moderate (615)	51%	35	6	8
High (567)	55%	30	7	8

There has been a decline in the proportion of shoppers who feel they will benefit "quite a bit" from nutrition labeling since the 1973 survey.

1973 food shoppers (1,500)

52% quite a bit of benefit
35% a little benefit
10% no benefit

Two-thirds of food shoppers say they would be willing to pay something for nutrition labeling on food containers.

A questioning technique used in the baseline study which was found to be useful in measuring shoppers' overall response to nutrition labeling was repeated in this study.

First, respondents were asked if they would be willing to pay 30¢ a week more on their overall food bill in order to have nutrition labeling. People willing to pay 30¢ more were asked if they would be willing to pay 50¢ more a week. People unwilling to pay 30¢ more were asked if they would be willing to pay 10¢ more. (These amounts were judgmental. The purpose of the questions was not to find out how much shoppers would really be willing to pay, but to get some idea of their level of commitment to this kind of labeling.)

The findings for all food shoppers:

40% willing to pay 50¢ more each week
16% willing to pay 30¢ more each week
9% willing to pay 10¢ more each week
34% not willing to pay anything

The table on the next page profiles shoppers in terms of their willingness to pay the maximum amount suggested (50¢) vs. unwillingness to pay anything for nutrition labeling. Attitudes toward nutrition labeling, as measured by this question, do vary considerably by population subgroup. Those groups most favorably inclined toward the labeling include:

- younger shoppers
- shoppers in the higher socioeconomic groups
- shoppers who score higher on the nutrition knowledge quiz and the "careful shopper" score
- shoppers who report a clearer understanding of the label

As is the case on similar evaluation questions, comparing the response levels from 1973 and 1975, a decline in the interest in nutrition labeling is indicated. Few people are willing to pay as much as 50¢ for nutrition labeling this year, and conversely, more are unwilling to pay anything.

1973 food shoppers (1,500)

48% willing to pay 50¢
19% willing to pay 30¢
8% willing to pay 10¢
25% not willing to pay anything

Table 37

Background Characteristics of Food Shoppers Willing to Pay
50¢ a Week for Nutrition Labeling, and Food Shoppers Not
Willing to Pay Anything for It.

	<u>Willing to pay weekly ...</u>	
	<u>50¢</u>	<u>Nothing</u>
All food shoppers (1,664)	40%	34%
AGE		
18 - 34 (659)	51%	22%
35 - 49 (561)	43%	33%
50 + (433)	30%	45%
SOCIOECONOMIC STATUS		
Low (545)	26%	47%
Middle (600)	46%	31%
High (519)	52%	24%
NUTRITION KNOWLEDGE		
Low (555)	25%	49%
Moderate (542)	44%	32%
High (567)	54%	21%
CAREFUL SHOPPER SCORE		
Low (355)	26%	52%
Moderate (834)	40%	33%
High (475)	52%	24%
UNDERSTANDING OF LABEL		
Low (482)	26%	47%
Moderate (615)	45%	27%
High (567)	48%	26%

Example of how to read table: 51% of the 18-34 age group would be willing to pay 50¢ a week for nutrition labeling: 22% of the 18-34 age group would not pay anything for nutrition labeling.

CHAPTER SUMMARY

1. Almost six food shoppers in ten (58%) say they have seen nutrition labels on food products.

Over half of the shoppers who have noticed nutrition labeling on food products say they have made use of them in choosing some of the foods or beverages they buy. (In other words, a third of all shoppers say they have used nutrition labeling.)

Younger shoppers and those in the higher socioeconomic groups are more likely to have used nutrition labeling.

2. When responding to questions about a sample nutrition label, about a third of the shoppers (34%) say they understand at least seven of the eight components of the label which were studied.

Another third of the shoppers (35%) say they understand four, five or six of the label's components, and 31% report understanding only three or fewer parts of the label.

Specifically, the proportion of shoppers who say they understand each part of the label is as follows:

Serving size or servings per container	85%	understand well enough to help make buying decisions
Calorie content	82%	
U.S. RDA	64%	
Protein content (grams)	62%	
Information on fat	58%	
Carbohydrate content	56%	
Cholesterol content	51%	
Sodium content	36%	

3. When presented with a choice of two ways to use nutrition label information -- either as a shopping or purchasing aid, or as an aid in planning and evaluating individuals' diets, shoppers are more likely to prefer the former.

Forty-two percent of shoppers say they would most likely use nutrition label information to help them get the best nutritional buys in the store. Twenty-eight percent say the main way they would use nutrition label information is to help plan a better diet at home.

About a fifth (22%), however, say they probably will not be using nutrition labeling too much.

4. Food shoppers tend to rate all of the nutrition label information which they understand as important to them in making buying decisions.
5. When asked to choose between nutrition labeling and other kinds of information which might be presented on food packages, shoppers' reactions are mixed:

- Shoppers strongly prefer nutrition information (58%) over recipes (17%).
- Shoppers are divided in choosing between nutrition labeling (42%) and information on making a well balanced meal with the food in the package (37%).

6. Nevertheless, almost three-fourths of shoppers (72%) say they would use nutrition information to help decide whether to buy a new brand for the first time, and most shoppers (78%) feel that they would receive at least a little benefit from nutrition labeling. In addition, two-thirds of shoppers (66%) say they would be willing to pay something for nutrition labeling on food containers.

However, support for and interest in nutrition labeling has slackened somewhat since 1973.

7. Related to shoppers' understanding and use of nutrition label information, is their understanding of the meaning of open dating. For the purposes of the survey, one example of open dating was used -- dates stamped on milk containers.

While about four shoppers in ten (43%) think correctly that the date stamped on milk refers to the date by which the product should be sold to the customer, almost the same proportion (38%) incorrectly thinks it is the date by which the milk should be used by the customer. Regardless of what they think is the current meaning of the date stamped on milk, over six shoppers in ten (62%) would prefer that it refer to the date by which the milk should be used by the customer.

IV.

Other Food-Related Beliefs and Household Practices

- Food shopper concept of own health and diet of household members
- Consumption of vitamins
- Weight-related issues
- Shopping patterns

1. PERCEPTIONS OF HOUSEHOLD HEALTH

Eight shoppers in ten believe their own health is at least "good".

When food shoppers are asked to rate their own health, 82% say it is either "excellent" (25%), "very good" (29%) or "good" (28%). Less than a fifth of respondents (17%) rate their health as either "fair" or "poor".

As might be expected, older shoppers are more likely than younger shoppers to rate their health as fair or poor.

Table 38

Self-Rating of Present Health

	<u>Excellent, very good</u>	<u>Good</u>	<u>Fair, poor</u>
All food shoppers (1,664)	54%	28	17
Age			
18 - 34 (659)	66%	24	8
35 - 49 (561)	57%	29	12
50+ (433)	42%	30	26

(No answer not shown)

A substantial majority of food shoppers believe that all members of their household get a well-balanced diet.

About eight shoppers in ten (79%) say that all members of their household are getting a well-balanced diet. About one-fifth (18%) say that "someone" or "no one" gets a well-balanced diet in their household.

Older shoppers believe that other members of their household are getting balanced diets more than do younger shoppers. As discussed on the next page, this is probably a factor of not having young children or teenagers in the home.

Table 39

Food Shopper Perception of Household Diet

	<u>Everyone getting well-balanced diet</u>	<u>Someone/no one getting well-balanced diet</u>
All food shoppers (1,664)	79%	18
AGE		
18 - 34 (659)	75%	23
35 - 49 (561)	74%	22
50 + (433)	86%	12

(No answer, not sure not shown)

These findings are basically comparable to those of the 1973 survey.

1973 food shoppers (1,500)

75% everyone getting balanced diet
22% someone not getting balanced diet

Fifteen percent of shoppers said that someone in their household was not getting a well-balanced diet, and they were asked who and why.

As mentioned previously, those shoppers who are most likely to have young children and/or teenagers at home (under age 50) tend to cite these family members as not getting a well-balanced diet.

Table 40

Household Member Not Getting a Well-Balanced Diet

	All food shoppers	AGE		
		18-34	35-49	50+
base:	(1,664)	(659)	(561)	(433)
Someone not getting a well-balanced diet	15%	20%	20%	9%
Homemaker	5%	7%	3%	5%
Pre-teen/child	4	6	5	*
Husband/spouse	3	5	2	1
Teenage son	2	1	6	1
Teenage daughter	2	1	6	1
Baby	1	2	1	-
Elderly person	1	-	*	1
Other	1	2	*	1

(multiple responses)

There is no consensus on the reason why a household member is not getting a well-balanced diet. Five percent of shoppers say that the person is a fussy eater and hard-to-please. (See table opposite).

In another question concerning household health, shoppers were asked if anyone in their household had an allergy or other problem which required a special diet. Three-fourths of food shoppers say no one in their household has such a problem, while 23% report having a household member whose health requires a special diet, e.g., for diabetes, hypertension, or allergy. The only subgroup difference on this question, as might be expected, is due to age. Older shoppers are more likely to have someone with a special dietary problem in their household.

*Less than .5%.

Table 41

Reasons for Household Member Not Getting a Well-Balanced Diet

	<u>All food shoppers</u>
base:	1,664
Someone not getting a well-balanced diet	<u>15%</u>
Fussy eater, hard-to-please	5
Is away from home too much to get the right kinds of food	3
Doesn't eat enough	2
Does too much snacking, no appe- tite, no appetite left at meals	2
Only likes foods that aren't good for you	1
Only likes sweet foods	1
On a reducing diet	1
Other	4

(multiple responses)

2. OTHER HEALTH RELATED ISSUES -- VITAMINS AND DIETING

About half of all food shoppers report vitamin usage in their households.

There are differences among shopper subgroups in terms of household vitamin consumption:

- There is more reported vitamin consumption among the youngest segment of the shopper population than among older shoppers.
- Vitamin consumption increases with socioeconomic status.
- Blacks are less likely to report vitamin consumption in their households than are others.

In 1973, a somewhat greater proportion of shoppers reported household vitamin consumption.

1973 food shoppers (1,500)

54% someone takes vitamins
46% no one takes vitamins

Table 42

Differences in Vitamin Consumption by Subgroups

	<u>Someone in household takes vitamins</u>	<u>No one take vitamins</u>
All food shoppers (1,664)	47%	52
AGE		
18 - 34 (659)	53%	46
35 - 49 (561)	44%	54
50 + (433)	44%	56
SOCIOECONOMIC STATUS		
Low (545)	38%	61
Middle (600)	52%	47
High (519)	52%	48
RACE		
White/other (1,485)	48%	51
Black (177)	37%	61

(No answer not shown)

In households where vitamins are consumed, it is the homemaker who most frequently takes them.

Spouses are reported next most frequently as taking vitamins. Younger children are reported as taking vitamins more often than teenagers.

Table 43

Reported Vitamin Consumption by Household Member

	All food shoppers	AGE		
		18-34	35-49	50 +
base:	(1,664)	(659)	(561)	(433)
Someone in household takes vitamins:	47%	53%	44%	44%
Myself (food shopper)	32%	34%	36%	35%
Spouse	16	14	17	17
Pre-teen child(ren)	11	21	14	1
Baby	6	16	3	0
Teenage son(s)	3	1	8	2
Teenage daughter(s)	4	1	10	2
Elderly person	2	*	1	3
Other	2	3	1	3

(multiple responses)

The main purpose of vitamin consumption is to "play it safe." Within each group of household members the majority is reported to take vitamins for this reason. Fewer shoppers say that someone in their household takes vitamins for a dietary need.

	Take vitamins	Play it safe	Dietary need
Myself (food shopper)	32%	17	10
Spouse	16%	11	4
Pre-teen child(ren)	11%	9	1
Baby	6%	3	1
Teenage son(s)	3%	3	*
Teenage daughter(s)	4%	3	1
Elderly person	2%	*	1
Other	2%	2	*

(Both, Not sure not shown)

*Less than .5%.

Almost six food shoppers in ten (57%) say that someone in their household is trying to gain or lose weight.

Most frequently, it is the shopper who is trying to lose or gain weight. Four shoppers in ten say that they are trying to lose weight, while 4% are trying to gain. About one-fifth of spouses are reportedly trying to lose weight.

Table 44

Household Members Who Are Reportedly Trying to Gain or to Lose Weight*

All food shoppers (1,664)	Trying to lose	Trying to gain
Myself	41%	4
Spouse	19%	4
Teenage daughter	5%	1
Teenage son	2%	1
Pre-teen child	1%	1

The homemaker and spouse are the most frequently reported dieters, across all age groups. Teenage dieters are mentioned more often by shoppers in the 35-49 age group than by shoppers in other age categories.

Table 45

Household Members Who Are Trying to Lose Weight
By Age of Respondent*

	18-34	35-49	50 +
base:	(659)	(561)	(433)
Myself (homemaker)	42%	42%	39%
Spouse	20	20	18
Teenage daughter	1	13	2
Teenage son	1	4	2
Pre-teen child	2	2	**

When asked whether this dieting is being done under a doctor's care, a majority in each case says no.

*Main mentions.

**Less than .5%.

3. FOOD SHOPPING PATTERNS

Over half of food shoppers (55%) do their marketing once a week, while one-fourth say they go with more frequency, and one-fifth go less often. Six shoppers in ten say they made a list before doing their most recent grocery shopping, and about seven in ten (68%) say they read ads for specials before going to the store the last time.

Table 46

Shopping Behavior

	<u>All food shoppers</u>
	base: (1,664)
FREQUENCY OF FOOD SHOPPING	
Every day or nearly every day	6%
Twice a week	18
Once a week	55
Less than once a week	18
Other	2
MADE A LIST BEFORE SHOPPING	
Yes, made a list	62%
No, did not make a list	37
READ ADS BEFORE SHOPPING	
Yes, read ads for specials	68%
No, waited until got to store	32

(Not sure not shown)

The overall shopping patterns reported on this page are similar to those reported in 1973, except that there has been an eight percent increase in shoppers reporting that they read store ads for specials before their most recent food shopping trip.

Three-fourths of shoppers say they looked for dates on products the last time they did their food shopping, and over four in ten say they checked the list of ingredients on a food product.

Of the respondents who did not check ingredients on a food product the last time they went grocery shopping, over half (32%) did check ingredients at some previous time. This increases to 78% the proportion of shoppers who have checked ingredients at one time or another.

Of the 63% of shoppers who say the store where they do their grocery shopping shows unit pricing, two-thirds (41%) say that they looked for the unit price on some item during their most recent grocery shopping experience.

Table 47

Reported In-Store Behavior

	<u>All food shoppers</u>	
	base:	(1,664)
LOOKED FOR DATE ON PRODUCTS		
Yes, looked for date		75%
No, did not		22
USED UNIT PRICING		
<u>Store shows unit pricing</u>		63%
Yes, looked for unit price		41%
No, did not		20
CHECKED LIST OF INGREDIENTS		
Yes, checked list of ingredients		46%
No, did not		52
Have checked before		32%
Have not checked before		17
(Not sure not shown)		

Since 1973, more shoppers report using open dating information, probably due to the increased availability of this information.

1973 food shoppers (1,500)

57% yes, looked for date
42% no, did not

An index of shopping behavior was developed which groups shoppers according to their shopping style. Some shoppers, for example, seem to have a more systematic approach to grocery shopping, while others are more casual about this task. The term "careful shopper" in the context of this score refers to a systematic approach to shopping.

The index comes from several sources:

	<u>% of Shoppers</u>
1 point -- made a list before last main shopping	62%
1 point -- read ads for specials at home before last main shopping	68%
1 point -- checked list of ingredients on cans or packages either last time did main food shopping or "ever"	46%
1 point -- looked for unit price last time in store	41%
1 point -- looked for open dating last time did main food shopping	75%
1 point -- have used nutrition labels before (Q. 38)	33%

Shoppers were grouped as follows:

- Low score -- 0-2 points
- Medium score -- 3 or 4 points
- High score -- 5 or 6 points

The table on the next page shows the subgroups in which occur the main differences among shoppers on this score:

- Women shoppers score higher than men
- Shoppers in the middle or high socioeconomic groups score higher than those in the low group
- As nutrition knowledge increases, so does a shopper's score on this index.

Table 48

Careful Shopper Score

	<u>Low</u>	<u>Medium</u>	<u>High</u>
All food shoppers (1,664)	22%	50	28
SEX			
Female (1,298)	20%	50	30
Male (366)	32%	48	20
SOCIOECONOMIC STATUS			
Low (545)	34%	46	20
Middle (600)	16%	53	31
High (519)	14%	50	36
NUTRITION KNOWLEDGE			
Low (555)	32%	48	20
Moderate (542)	21%	49	30
High (567)	12%	53	35

Shoppers were asked whether they had made any changes in their shopping behavior over the past year, and almost half (46%) said they have.

Previously it was shown that interest in ads and specials related to food shopping has increased. The table below shows that among shoppers reporting a change in their shopping patterns over the past year, many say they are watching for specials and/or using coupons, buying less sweets and snacks and less meat.

Those shoppers who fall into the higher ranges of the "careful shopper" score are more apt to be making changes in their shopping behavior.

Table 49

Changes in Shopping Behavior Over the Past Year

	All food shoppers	<u>"Careful Shopper" Score</u>		
		<u>Low</u>	<u>Medium</u>	<u>High</u>
base:	(1,664)	(355)	(834)	(475)
Yes	46%	32%	48%	56%
Watch specials/use coupons	15%	10%	14%	22%
Buy less sweets/snacks	13	6	14	17
Using less meat	12	8	12	14
Buying cheaper cuts of meat	10	8	10	12
Use less prepared foods	7	3	7	9
Use store brands	5	2	5	8
Change in family composition	3	9	16	21
Other	16	9	16	21
No	52	65	52	43

(Multiple responses; not sure not shown)

CHAPTER SUMMARY

1. The majority of food shoppers (82%) rate their health as "excellent," "very good," or "good." A similar proportion (79%) also believe that all members of their household get a well-balanced diet. About one shopper in six says someone in the household is not getting a well-balanced diet.

Older shoppers are more likely to rate their own health as "fair" or "poor" than younger shoppers. Nevertheless, older shoppers are more likely to believe everyone in their household is getting a well-balanced diet.

2. In households where someone is believed not to be getting a well-balanced diet, there is not one family member type consistently cited by homemakers nor is there any one reason given for that person not getting a well-balanced diet.
3. About half (47%) of food shoppers report that someone in their household takes vitamins, and respondents most frequently say that they, themselves, are the vitamin consumer in the household. In most cases, vitamins are taken as a precautionary measure, and not for any particular dietary need.
4. Forty-one percent of food shoppers report they are trying to lose weight, while only 4% say they are trying to gain. In fact, 57% of homemakers report that someone in their household is trying to gain or lose weight. Few say the dieting is being done under a doctor's care.
5. The majority of food shoppers do their shopping once a week (55%), made a list before their last food shopping (62%), and read ads for specials before shopping (68%). Three-fourths say they looked for dates on products during their last shopping, and about four in ten say they looked for unit pricing (41%) or checked a list of ingredients (46%) at that time.
6. About half (46%) of food shoppers also say they made some sort of change in their food shopping behavior over the last year, and these changes mainly include watching specials and using coupons, buying less sweets or snacks, using less meat, and buying cheaper cuts of meat.

APPENDIX

- Guide to Statistical Significance of survey results
- Development (Pretesting)
- Sampling and Interviewing
- Data Processing (indices and scores)
- Codes for Open Ended Questions

Guide to Statistical Significance of Survey Results

Results of all surveys based on a sample of a population are subject to sampling tolerances. The probable limits of such tolerances can be estimated by standard statistical methods. The sampling tolerances vary with the size of the sample and the size of the percentage points. For example, in a sample of 1,664 interviews if an observed percentage result is 60%, the chances are approximately 95 in 100 that the range 57% to 63% includes the true percentage for the entire universe.

<u>Size of Sample</u>	<u>Approximate Sampling Tolerances</u>				
	<u>10% or 90%</u>	<u>20% or 80%</u>	<u>30% or 70%</u>	<u>40% or 60%</u>	<u>50%</u>
1,650	2%	2%	3%	3%	3%
1,500	2%	3%	3%	3%	3%
800	3%	3%	4%	4%	4%
700	3%	4%	4%	5%	5%
600	3%	4%	5%	5%	5%
500	3%	4%	5%	5%	5%
400	4%	5%	6%	6%	6%
300	4%	6%	6%	7%	7%
200	5%	7%	8%	8%	9%
100	7%	10%	11%	12%	12%

Tolerances are also involved in the comparison of results from two sub-groups of respondents covered by the study, such as college educated homemakers (497) and those with less than high school education (212). If an observed percentage result is at or near 60% for one group and, say, 50% in the other, and one wanted to compare the above two groups, there would have to be a difference of at least 10% in order for it to be considered a real difference and not based on chance alone.

Differences Required for Significance

<u>Size of Samples Compared</u>	<u>10% or 90%</u>	<u>20% or 80%</u>	<u>30% or 70%</u>	<u>40% or 60%</u>	<u>50%</u>
1,650 and 1,500	3%	4%	4%	4%	4%
1,500 and 200	5%	7%	9%	9%	9%
1,300 and 400	4%	6%	7%	7%	7%
1,100 and 500	4%	5%	6%	7%	7%
900 and 500	4%	6%	6%	7%	7%
200	6%	8%	9%	9%	10%
800 and 500	4%	6%	7%	7%	7%
400	5%	6%	7%	7%	8%
700 and 600	4%	6%	6%	7%	7%
400	5%	6%	7%	8%	8%
600 and 500	4%	6%	7%	7%	8%
400	5%	6%	7%	8%	8%
500 and 500	5%	6%	7%	8%	8%
400	5%	7%	8%	8%	8%
200	6%	8%	9%	10%	10%
400 and 400	5%	7%	8%	9%	9%
300	6%	8%	9%	9%	9%
200	6%	9%	10%	10%	11%

Development

A total of four pretests was conducted during the developmental phase of the study.

Developmental Pretests

Pretest 1 to 3 - consisted of nine interviews conducted by members of the Response Analysis staff and experienced local interviewers. Interviews were conducted in the central New Jersey area.

Pretest 4 - was conducted in Philadelphia, Pennsylvania, area by members of the professional field staff. Nine interviews were done in late November 1974.

The questionnaire was revised and refined after each wave of developmental interviewing.

100 Case Pretest

In May 1975 Response Analysis conducted a 100 case pretest of the entire questionnaire and a statistical analysis was performed.* The members of the Response Analysis field staff completed the pretest between May 1 and May 7, 1975 in four locations: Springfield, Massachusetts; Gadsden, Alabama; Detroit, Michigan; and Salem, Oregon. Interviewers received complete sets of instructions and evaluated the interviewing experience on separate forms. In addition to the pretest with 100 food shoppers, the nutrition knowledge quiz was administered to 85 students in an introductory nutrition course at Rutgers University. The purpose of this pretest was to:

Perform an analysis of the revised nutrition knowledge test on the 1975 questionnaire.

Provide some indication of the internal reliability of data collected on the 24-hour dietary intake section. Data from this section of the interview are not reported in this volume.

*"1975 Nutrition Survey, Item Analysis - Nutrition Knowledge Quiz, Dietary Intake Pretest Analysis," prepared for Division of Consumer Studies, Bureau of Foods, Food and Drug Administration, by Response Analysis Corporation, June 1975.

Sampling and interviewing

The data were collected using a national probability sample of households. In each household, the interview was conducted with the household member most responsible for the food shopping. Face-to-face personal interviews were conducted during July and August, 1975 with 1,664 main food shoppers.

Sample Design

The Response Analysis Corporation national probability sample was used for this study. Sample locations and households and particular individuals to be interviewed, were specified by the sampling plan and by explicit instructions to the interviewers. None of the selection steps were left to the discretion of the interviewer.

The sample design included the following study requirements:

A national sample of homemakers or persons most responsible for the food shopping in the household -- referred to as the "main food shopper."

An oversampling of men who do at least half of the food shopping for the household.

A larger sample of homemakers, male and female, who are in the under 50 age group than would normally occur in a probability sample.

Both of the latter two steps were taken to increase the size of these groups for analysis purposes. Shoppers 50 and older were sampled at different rates than they would normally occur in the population. Details on this procedure are provided later on page 93. The oversampling of males and the undersampling of the 50 + age group was compensated for by appropriate weights in the computer processing of the study results so that total survey results would reflect the actual distribution of younger and older adults and males and females in the study population, i.e., main food shoppers.

The sequence of steps used in the development of the sample included:

Selection of a national sample of 103 primary areas (counties or groups of counties) stratified by geographic region, type of community, and other population characteristics.

Selection of 600 interviewing locations or secondary areas (Census enumeration districts or block groups) for the national sample.

Selection of specific sample segments in each interviewing location for field administration of the survey.

Screening of sample households to determine who the main food shopper was and the shopper's age and sex.

Details on each of these steps are provided in the following section.

Selection of Sample Areas for National Sample

Primary areas were selected as follows:

1. The entire area of the coterminous United States was first divided into approximately 1,140 primary sampling units (PSU's). Each PSU is a well-defined geographic unit, usually a county or group of counties with a minimum population of 50,000 in 1970. PSU's are of two general types: (1) metropolitan areas, or parts of metropolitan areas; and (2) other areas.
2. Thirty-eight large PSU's were included in the sample as self-representing primary areas. These include the 25 largest metropolitan areas in the United States.
3. All other PSU's were grouped into 65 strata, with an average stratum population of approximately 2,000,000 persons in 1970. Basic criteria used in the stratification procedure were:

Geographic division (within a stratum, all PSU's are in the same Census geographic division).

Metropolitan or nonmetropolitan character (with the exception of a few counties, strata consist entirely of metropolitan areas or entirely of other counties).

These two stratification features are employed in regional and community-size analysis.

Additional stratification criteria included population density, rate of population growth, and industrial characteristics.

4. One PSU was selected with probability proportionate to population size from each of the 65 strata that included two or more PSU's.

Each of the 103 primary areas (38 selected as self-representing areas, plus 65 selected as a result of the stratification procedure) is a relatively heterogeneous area. Most include city, town, suburban and rural residents. Some are primarily small town or rural but are several counties in size.

Within the 103 primary areas we have defined and selected 600 secondary areas or specific sample locations. Secondary areas in the RAC sample are areas of approximately 2,500 population in 1970. A secondary area may be as small geographically as a block or two in a densely populated portion of a city or it may be an entire county or even larger in a sparsely populated rural area.

Secondary areas usually consist of a number of Census administrative units -- either enumeration districts or block groups. Census microfilm records have been used to define and select secondary areas. These units were selected with probability proportionate to population size.

A subsample of 200 interviewing locations was selected for this study.

Segment and Housing Unit Assignments

For all interviewing locations selected for this study, trained interviewers had made rough field counts, usually in segments of about 10 to 25 housing units, to divide block groups and enumeration districts into administratively convenient survey units. Detailed maps, instructions, and count sheets were provided for those assignments. Segments were clearly defined geographic units bounded by streets, roads, streams, or other landmarks, or by specific starting and stopping addresses.

Probability procedures were used to select one or more segments -- including a total of approximately 20 housing units -- for each interviewing location in this survey.

Procedure Within Sample Housing Units

A "face sheet" for each of the sample housing units provided the interviewer with a series of steps with which to obtain a listing of household members age 18 or older who do food shopping. If, for any of a variety of reasons, there was not a main food shopper in the household, the interview was not continued. Rules were provided to ascertain the person most responsible for the food shopping and for determining whom to interview if the food shopping was shared equally by more than one member of the household.

To accomplish the undersampling of the 50 year or older group and the oversampling of males, special face sheets were used which instructed the interviewer whether or not to interview the main food shopper in the household.

The relative sampling rates were (person first had to qualify by doing at least half of the household's food shopping):

- Males under 50: interview all
- Males 50 +: interview one half
- Females under 50: interview 8 out of 11
- Females 50+: interview 8 out of 22

Interviewing Experience

A. Field classification of housing units assigned

Housing units assigned	4280
Vacant	324
Occupied	3956

B. Field experience for occupied households

Occupied households	3956
Eligibility for interview unknown	536
Not eligible for interview	1386
Eligible for interview	1994

C. Interview Completion Experience

Eligible respondents*	2333
Interviews included in analysis	1664
Households not completed (no one at home, refused and other incompletes)	669

D. Verification of Completed Materials

<u>Interviews used in analysis</u>	<u>Number Verified</u>
1,664	272

E. Completion Rates

	<u>Eligible</u>	<u>Completed</u>	
		<u>Number</u>	<u>%</u>
Total National Sample	2333	1664	71.3
<u>Region of United States</u>			
Northeast	593	419	70.7
North Central	660	463	70.2
South	687	519	75.6
West	392	263	67.1
<u>Type of Community</u>			
Largest metropolitan	1030	678	65.8
Other metropolitan	649	478	73.6
Non-metropolitan	658	508	77.2

The final weight factor for each respondent was the product of the age/sex and location weights.

Data Processing

Weighting Procedures

Two kinds of weight factors were applied in the processing of survey data to compensate for the undersampling of homemakers age 50 and older, the oversampling of men, and to adjust for differences in interview completion experience.

1. Age and sex weighting

	<u>Selection Rate</u>	<u>Weight Factor</u>
Male under 50	all	1.00
Male 50 or older	1/2	2.00
Female under 50	8/11	1.38
Female 50 or older	4/11	2.75

2. Location weighting

To adjust for differences in completion rate, each interviewing location was given a weight equal to

$$\frac{\text{estimated eligible respondents}}{\text{completed interviews}}$$

Description of Analysis Variables

A. Region

Region of the country

States grouped as Northeast (Census classifications of New England and Middle Atlantic)

Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania

States grouped as North Central (Census classifications of East North Central and West North Central)

Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

States grouped as South (Census classifications of South Atlantic, East South Central, and West South Central)

Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas

States grouped as West (Census classifications of Mountain and Pacific)

Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California

B. Population Density

Large metro area includes the top 25 Standard Metropolitan Statistical Areas (SMSA):

New York	Newark
Los Angeles	Minneapolis-St. Paul
Chicago	Dallas
Philadelphia	Anaheim-Garden Grove-Santa Ana
Detroit	Seattle
San Francisco	Milwaukee
Washington	Cincinnati
Boston	Atlanta
Pittsburgh	Paterson-Clifton-Passaic
St. Louis	Buffalo
Baltimore	San Diego
Cleveland	Miami
Houston	

C. Nutrition Knowledge Score

Low = 0-64 points

Medium = 65-82 points

High = 83+ points

(Maximum possible = 134

actual maximum = 115)

Respondents received one point for each correct answer on the knowledge questions. Scores are based on the questions on the following page. Correct answers are circled.

Scoring Key **

1. Nutrients easy and hard for the body to get . . .
2. Nutrients stored by the body . . .

	1.	2.
a. PROTEIN	① EASY TO GET 2 HARD TO GET 3 NOT SURE	1 BODY STORES ② DOES NOT STORE 3 NOT SURE
b. VITAMIN A	* ① EASY TO GET 2 HARD TO GET 3 NOT SURE	① BODY STORES 2 DOES NOT STORE 3 NOT SURE
c. THIAMIN (VITAMIN B ₁)	① EASY TO GET 2 HARD TO GET 3 NOT SURE	1 BODY STORES ② DOES NOT STORE 3 NOT SURE
d. FAT	① EASY TO GET 2 HARD TO GET 3 NOT SURE	① BODY STORES 2 DOES NOT STORE 3 NOT SURE
e. CARBOHYDRATES	① EASY TO GET 2 HARD TO GET 3 NOT SURE	1 BODY STORES ② DOES NOT STORE 3 NOT SURE
f. RIBOFLAVIN (VITAMIN B ₂)	① EASY TO GET 2 HARD TO GET 3 NOT SURE	1 BODY STORES ② DOES NOT STORE 3 NOT SURE
g. VITAMIN C	* ① EASY TO GET 2 HARD TO GET 3 NOT SURE	1 BODY STORES ② DOES NOT STORE 3 NOT SURE
h. IRON	1 EASY TO GET ② HARD TO GET 3 NOT SURE	① BODY STORES 2 DOES NOT STORE 3 NOT SURE
i. VITAMIN D	1 EASY TO GET ② HARD TO GET 3 NOT SURE	① BODY STORES 2 DOES NOT STORE 3 NOT SURE
j. CALCIUM	1 EASY TO GET ② HARD TO GET 3 NOT SURE	① BODY STORES 2 DOES NOT STORE 3 NOT SURE

* Item not included in score.

**See page 107 for sources used to develop Nutrition Knowledge Score.

3. Foods having a lot of the same benefits as milk . . .

	<u>HAVE A LOT OF SAME BENEFITS AS MILK</u>	<u>DO NOT HAVE A LOT OF THE SAME BENEFITS</u>
a. FISH	①	2
b. RICE	1	②
c. ORANGES	1	②
d. CHICKEN	①	2
e. WHITE POTATOES	1	②
f. CARROTS	1	②
g. EGGS	①	2
h. MACARONI	1	②
i. PORK AND BEANS	①	2
j. BROCCOLI	1	②
k. PEANUT BUTTER	①	2
l. COTTAGE CHEESE	①	2

4. Milk is a good source of . . .

	<u>MILK IS GOOD SOURCE</u>	<u>MILK IS NOT A GOOD SOURCE</u>
a. VITAMIN A	1	②
b. THIAMIN (VITAMIN B ₁)	1	②
c. RIBOFLAVIN (VITAMIN B ₂)	①	2
d. VITAMIN C	1	②
e. VITAMIN D	①	2
f. PROTEIN	①	2
g. CARBOHYDRATES	1	②
h. FAT	①	2
i. IRON	1	②
j. CALCIUM	①	2

5. Milk is important for . . .

	<u>MILK IS IMPORTANT</u>	<u>MILK IS NOT IMPORTANT</u>
a. FOR THE EYES	1	(2)
b. FOR STRONG TEETH AND BONES	(1)	2
c. FOR BUILDING BODY TISSUE	(1)	2
d. FOR BUILDING BLOOD CELLS	1	(2)
e. FOR FIGHTING INFECTIONS	1	(2)
f. FOR THE NERVOUS SYSTEM	(1)	2
g. FOR HEALTHY SKIN	1	(2)

6. Foods having a lot of the same benefits as beef . . .

	<u>HAVE A LOT OF SAME BENEFITS AS BEEF</u>	<u>DO NOT HAVE A LOT OF THE SAME BENEFITS</u>
a. FISH	(1)	2
b. RICE	1	(2)
c. ORANGES	1	(2)
d. CHICKEN	(1)	2
e. WHITE POTATOES	1	(2)
f. CARROTS	1	(2)
g. EGGS	(1)	2
h. MACARONI	1	(2)
i. PORK AND BEANS	(1)	2
j. BROCCOLI	1	(2)
k. PEANUT BUTTER	(1)	2
l. COTTAGE CHEESE	(1)	2

7. Beef is a good source of . . .

	<u>BEEF IS GOOD SOURCE</u>	<u>BEEF IS NOT A GOOD SOURCE</u>
a. VITAMIN A	1	(2)
b. THIAMIN (VITAMIN B ₁)	1	(2)
c. RIBOFLAVIN (VITAMIN B ₂)	1	(2)
d. VITAMIN C	1	(2)
e. VITAMIN D	1	(2)
f. PROTEIN	(1)	2
g. CARBOHYDRATES	1	(2)
h. FAT	(1)	2
i. IRON	(1)	2
j. CALCIUM	1	(2)

8. Beef is important for . . .

	<u>BEEF IS IMPORTANT</u>	<u>BEEF IS NOT IMPORTANT</u>
a. FOR THE EYES	1	(2)
b. FOR STRONG TEETH AND BONES	1	(2)
c. FOR BUILDING BODY TISSUE	(1)	2
d. FOR BUILDING BLOOD CELLS	(1)	2
e. FOR FIGHTING INFECTIONS	1	(2)
f. FOR THE NERVOUS SYSTEM	1	(2)
g. FOR HEALTHY SKIN	1	(2)

9. Foods having a lot of the same benefits as tomatoes . . .

	HAVE A LOT OF SAME BENEFITS AS TOMATOES	DOES NOT HAVE A LOT OF THE SAME BENEFITS
a. FISH	1	(2)
b. RICE	1	(2)
c. ORANGES	(1)	2
d. CHICKEN	1	(2)
e. WHITE POTATOES	(1)	2
f. CARROTS	(1)	2
g. EGGS	1	(2)
h. MACARONI	1	(2)
i. PORK AND BEANS	1	(2)
j. BROCCOLI	(1)	2
k. PEANUT BUTTER	1	(2)
l. COTTAGE CHEESE	1	(2)

10. Tomatoes are a good source of . . .

	TOMATOES ARE GOOD SOURCE	TOMATOES ARE NOT A GOOD SOURCE
a. VITAMIN A	(1)	2
b. THIAMIN (VITAMIN B ₁)	1	(2)
c. RIBOFLAVIN (VITAMIN B ₂)	1	(2)
d. VITAMIN C	(1)	2
e. VITAMIN D	1	(2)
f. PROTEIN	1	(2)
g. CARBOHYDRATES	1	(2)
h. FAT	1	(2)
i. IRON	1	(2)
j. CALCIUM	1	(2)

11. Tomatoes are important for . . .

	<u>TOMATOES ARE IMPORTANT</u>	<u>TOMATOES ARE NOT IMPORTANT</u>
a. FOR THE EYES	①	2
b. FOR STRONG TEETH AND BONES	1	②
c. FOR BUILDING BODY TISSUE	1	②
d. FOR BUILDING BLOOD CELLS	1	②
e. FOR FIGHTING INFECTIONS	①	2
f. FOR THE NERVOUS SYSTEM	1	②
g. FOR HEALTHY SKIN	①	2

12. Foods having a lot of the same benefits as enriched bread . . .

	<u>HAVE A LOT OF SAME BENEFITS AS BREAD</u>	<u>DOES NOT HAVE A LOT OF THE SAME BENEFITS</u>
a. FISH	1	②
b. RICE	①	2
c. ORANGES	1	②
d. CHICKEN	1	②
e. WHITE POTATOES	①	2
f. CARROTS	1	②
g. EGGS	1	②
h. MACARONI	①	2
i. PORK AND BEANS	1	②
j. BROCCOLI	1	②
k. PEANUT BUTTER	1	②
l. COTTAGE CHEESE	1	②

13. Enriched bread is a good source of . . .

	<u>BREAD IS GOOD SOURCE</u>	<u>BREAD IS NOT A GOOD SOURCE</u>
a. VITAMIN A	1	(2)
b. THIAMIN (VITAMIN B ₁)	(1)	2
c. RIBOFLAVIN (VITAMIN B ₂)	(1)	2
d. VITAMIN C	1	(2)
e. VITAMIN D	1	(2)
f. PROTEIN	1	(2)
g. CARBOHYDRATES	(1)	2
h. FAT	1	(2)
i. IRON	(1)	2
j. CALCIUM	1	(2)

14. Enriched bread is important for . . .

	<u>BREAD IS IMPORTANT</u>	<u>BREAD IS NOT IMPORTANT</u>
a. FOR THE EYES	1	(2)
b. FOR STRONG TEETH AND BONES	1	(2)
c. FOR BUILDING BODY TISSUE	(1)	2
d. FOR BUILDING BLOOD CELLS	(1)	2
e. FOR FIGHTING INFECTIONS	1	(2)
f. FOR THE NERVOUS SYSTEM	(1)	2
g. FOR HEALTHY SKIN	1	(2)

References:

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- U.S. Department of Agriculture, "Food and Nutrient Intake of Individuals in the United States, Spring 1965." Household Food Consumption Survey, 1965-66, Report No. 11, 1972.
- U.S. Department of Health, Education and Welfare, "Preliminary Findings of the First Health and Nutrition Examination Survey, U.S. 1971-72 Dietary Intake and Biochemical Findings." DHEW Publication No. (HFA) 74-1219-1, 1974.
- U.S. Department of Health, Education and Welfare, "Ten State Nutrition Survey 1968-70, V--Dietary." DHEW Publication No. (HSM) 72-8133, 1972.

D. Self-Concept -- Nutrition Knowledge

High = 10,9,8,7 points

Medium = 6,5 points

Low = 4,3,2,1 points

Scale is as follows:

"This is a nutrition scale. On the top end is where professional food scientists and professional dieticians would go. On the other end is where you would put people who know almost nothing about nutrition. Please give me an idea of where you would go on this scale. Just give me the number between 1 and 10 that shows about where you fit."

10	A lot (food scientists, home economists, dieticians)	
9	}	Quite a bit
8		
7		
6	}	Some
5		
4	}	Not too much
3		
2		
1		Almost nothing

E. Socioeconomic Status

High = 11-15 points

Medium = 8-10 points

Low = 4-7 points

Score based on following questions:

1. "Please tell me which of these comes closest to what (the chief wage earner does/you do). Just give me the number."*

	<u>Points</u>
Professional/technical	5
Managers/officers	4
Other white collar	3
Blue collar	2
Housewife	3
Temporarily unemployed	3
Retired	3
Not reported	3

2. "What is the highest grade (or year) of school (the chief wage earner has/you have) completed?"*

	<u>Points</u>
College graduate or beyond	5
Some college	4
High school graduate	3
High school incomplete	2
Less than high school	1
Not reported	3

3. "Could you tell me approximately what your total family income was last year before taxes? Just give the letter from the list."

	<u>Points</u>
\$20,000 or more	5
\$15,000 to \$19,999	4
\$10,000 to \$14,999	3
\$ 5,000 to \$ 9,999	2
Under \$5,000	1
Not reported	3

*The score was based on the information pertaining to the chief wage earner if possible. If sufficient information was not available on the chief wage earner, then the homemaker's occupation and/or education was included in the score.

F. Food Beliefs Index

Well informed = 4-6 points

Not well informed = 0-3 points

Score based on the following questions:

- | | | |
|----|---|-------------------------------|
| 1. | Most people can get enough nourishment if they just eat things they like. | Disagree or depends = 1 point |
| 2. | Any food from a supermarket is good for you. | Disagree = 1 point |
| 3. | Between meal foods are never as good for you as the food that you get at regular meals. | Disagree or depends = 1 point |
| 4. | Weighing the right amount you are properly nourished. | Disagree = 1 point |
| 5. | Canned or frozen vegetables are as nutritious as fresh vegetables. | Disagree or depends = 1 point |
| 6. | Is added vitamin C as beneficial as fresh vitamin C? | Yes = 1 point |

G. Careful Shopper Score

Low = 0-2 points

Medium = 3-4 points

High = 5-6 points

Score based on the following

- | | |
|--|---------------|
| 1. Made a list before last main shopping. | Yes = 1 point |
| 2. Read ads for specials at home before last main shopping. | Yes = 1 point |
| 3. Checked list of ingredients on cans or packages last time did main food shopping. | Yes = 1 point |
| 4. Or . . . "Ever" checked list of ingredients. | Yes = 1 point |
| 5. Looked for unit price last time in store. | Yes = 1 point |
| 6. Looked for open dating last time did main food shopping. | Yes = 1 point |
| 7. Have used nutrition labels before. | Yes = 1 point |

H. Education

Respondents who had education beyond high school were included in the college group which ranged from some college through the advanced college and professional degree level.

CODES USED TO ANALYZE SELECTED

OPEN-ENDED QUESTIONS

1. "On which kinds of food or beverages have you made use of these (nutrition labeling) labels?"
2. "Why don't you think you'll be using this kind of information (nutrition labels)?"

On which kinds of foods or beverages have you made use of these labels?

- 1 MILK & MILK PRODUCTS: cheese; ice cream; sour cream; cottage cheese
- 2 MEAT/POULTRY/FISH: canned meat; tuna; shrimp; corned beef hash
- 3 GRAIN PRODUCTS: bread, cereal; pasta; noodles; crackers; rice
- 4 VEGETABLES
- 5 FRUITS: fruit cocktail
- 6 BEVERAGES (NON-DIETETIC): juices, soft drinks; iced tea; Kool Aid; Gatorade
- 7 DIETETIC: soft drinks, etc.; diet colas; Diet Pepsi
- 8 BABY FOODS
- 9 FROZEN, PACKAGED, PREPARED FOODS: boxes of pudding; casseroles; Breakfast Squares; instant potatoes; Jell-O; canned stew; canned goods (non-specific)
- 0 FATS: butter, margarine, oils, shortening; salad dressing; mayonnaise
- X MISCELLANEOUS
- Y DON'T KNOW/NO ANSWER

Why don't you think you'll be using this kind of information (nutrition labels)?

- 1 I DON'T UNDERSTAND THEM: Too much wording, too complicated; I don't understand all that stuff about vitamins, calories, and all that stuff.
- 2 WON'T CHANGE MY HABITS/BUY WHAT I LIKE, WHAT I'VE ALWAYS USED: I've always eaten what I wanted to and don't think about it too much; I buy food I'm used to buying and like to eat; even if I did I still have been eating this way for years and nutrition labeling would not help me; don't comparison shop and try lots of new things; I won't be changing my way of buying or cooking after all these years.
- 3 NOT INTERESTED IN USING THEM: Because don't pay attention to it; it's not important to me; don't use information on nutrition too much; I go to buy a can of beans, I don't go to read labels.
- 4 TAKES TOO MUCH TIME: I probably would not take the time to read labels; don't have patience to analyze each detail; it would take too long to shop.
- 5 ALREADY HAVE SUFFICIENT NUTRITION KNOWLEDGE/DON'T NEED LABELING: Most people know what they are getting without labeling it; I know roughly the nutrition content, I don't bother to look on the cans; I feel I balance my meals now.
- 6 DON'T BUY FOODS WITH NUTRITION LABELING: I buy fresh meats, fresh vegetables and don't buy many packaged products any more.
- 7 DON'T HAVE ANY SPECIAL DIETARY NEEDS
- 8 CAN GET BALANCED MEALS WITHOUT NUTRITION INFORMATION (Don't need nutrition knowledge): There's such a variety of foods available that you get your normal nutrition anyhow; I assume throughout the week whatever I will make will balance out.
- X OTHER
- Y DON'T KNOW/NO ANSWER

Notes on Detailed Tabulations

Each question included in the survey is analyzed by two banners:

Banner 1

Age:

18-25
18-34
35-49
50 or over

Education:

Less than high school
High school graduate
College

Region*

Northeast
North Central
South
West

Population Density*

Large metro
Other metro
Non metro

Sex

Male
Female

Banner 2

Socioeconomic Status*

Low
Medium
High

Race

White, other
Black

Nutrition Knowledge*

Low
Medium
High

Self-Concept -- Nutrition Knowledge*

Low
Medium
High

Food Beliefs*

Not well informed
Well informed

Careful Shopper Score*

Low
Medium
High

*Further explanation of these subgroups begins on page 98.

Frequency data

Detailed tabulations show unweighted frequencies for homemakers (actual numbers of cases) for each subgroup. In the tables, these data are usually the first line of data for a question and are designated as "number of interviews."

The second line at the top of the tables, designated as "weighted total" identifies the weighted frequencies. Probability sample data are conventionally weighted (that is, some classes of respondents are counted as more or less than their actual numbers in the sample) in order to adjust the sample so that it better reflects the population from which it is drawn. Percentages are tabulated from the weighted data. The frequency entries in each cell of the tables are weighted frequencies.

Descriptions of the weighting procedures are on page 97.

Interviewing Materials

Selected Exhibit Cards

Card D: Nutrition Scale
for self-rating
of nutrition
knowledge

Card G: Sample nutrition
label

NUTRITION SCALE

ABOUT HOW MUCH DO YOU KNOW ABOUT NUTRITION?

A LOT	10	{ FOOD SCIENTISTS HOME ECONOMISTS DIETICIANS
{ QUITE A BIT	9	
	8	
	7	
{ SOME	6	
	5	
{ NOT TOO MUCH	4	
	3	
	2	
ALMOST NOTHING	1	

Sample Label

NUTRITION INFORMATION**Per Serving**

Serving size = 8 oz.

Servings per container = 2

Calories	560
Protein	23 g
Carbohydrate	43 g
Fat	33 g
(Percent of Calories from fat = 53%)	
Polyunsaturated*	22 g
Saturated	9 g
Cholesterol* (20 mg/100 g)	40 mg
Sodium (365 mg/100 g)	810 mg

Percentage of U.S. Recommended Daily
Allowances (U.S. RDA)

Protein	35	Niacin	25
Vitamin A	35	Calcium	7
Vitamin C	10	Iron	25
Thiamin	15	Vitamin B₆	20
Riboflavin	15	Vitamin B₁₂	15

*Information on fat and cholesterol content is provided for individuals who, on the advice of a physician, are modifying their total dietary intake of fat and cholesterol.

FOOD AND NUTRITION

A Survey of Information, Belief, and Behavior

Part 2

Findings from Nationwide Panel Sample
of Food Shoppers

FINAL REPORT prepared by Herbert Abelson, Morris Cohen

Response Analysis Corporation
Princeton, New Jersey

Conducted for

DIVISION OF CONSUMER STUDIES

BUREAU OF FOODS
FOOD AND DRUG ADMINISTRATION

April 1976

RAC 3769

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INTRODUCTION

During 1973, Response Analysis conducted a nationwide study for the Food and Drug Administration which provided information on nutrition knowledge, beliefs about nutrition, and reactions to the concept and features of nutrition labeling among food shoppers. In 1975, a subsample of 607 respondents was reinterviewed with questionnaires nearly identical to those used in 1973.

Objectives

The main objective of the 1973 survey was to obtain a baseline measurement of nutrition knowledge and attitudes among persons primarily responsible for household food purchases. A principal objective of the panel study is to examine the formation, change, and development of attitudes, beliefs, and knowledge about nutrition.

Approach

A panel study which collects information on identical sets of questions from the same sample on two or more occasions permits the estimation of the extent of gross change in the population. The panel study in this instance attempts to answer three questions:

- What kinds of people are likely to shift -- i.e., which demographic subgroups?
- Why do these shifts take place -- i.e., what are the predictive variables which change over time and have impact on knowledge, beliefs, and practices?
- In what directions are shifts made -- i.e., are shoppers gaining or losing knowledge?

One limitation of the panel study described herein is the problem of contamination or conditioning in connection with successive measurement.* This conditioning, contaminating, or educational effect may take at least two forms:

- Panel participation may increase the respondent's awareness of the issue covered by the survey -- e.g., questions about nutrition labeling might cause a respondent to be more aware of labeling. This awareness, then, could be attributable either to an education campaign or to the questioning process.
- The respondent's initial statement of attitudes, opinions, and beliefs may lead him to provide answers to the second measure that are consistent with the first.

*Please see the Appendix for a discussion of panel effect.

Respondent turnover (changes in one direction plus those in an opposite direction) is assessed throughout this report. We are also interested in evaluating net changes within the panel group (changes in one direction subtracted from changes in the opposite direction).

Both typologies (net and gross change) may be found in this document. Most tables treat both gross and net change. We have included measures of the marginal results for each year -- i.e., the total proportion reporting an attitude in 1973 and the total proportion reporting that attitude in 1975. The difference between these results is the net change from 1973 to 1975.

We also report the proportion providing identical responses on both measures. Taking the difference between this figure and the 1973 marginal result plus the difference between the figure and the 1975 marginal result equals the proportion of changers or shifters between measurements. See pages iii-vi for examples of how to read tables of this type.

Only a limited number of the total questions asked in the panel questionnaire were both of analytic interest and amenable to measurement of change. The subset of questions analyzed was selected by Response Analysis in conjunction with the Division of Consumer Studies of the FDA.

These data are amenable to several analytic techniques which measure "repeated measures" data. One such technique, the "turnover table" of switchers, is detailed in the Appendix. Tables found in this report are descriptive in nature. See the Appendix for sampling tolerances for use in ascertaining statistical significance of findings.

Research Methods

Sampling and interviewing:

The data were gathered by means of a panel sample of people who participated in the Nationwide Nutrition Study conducted in 1973. These data were collected using a national probability sample of households. The panel sample was stratified by three groups from the original sample: respondents in high, medium, and low nutrition knowledge groups.

Personal face-to-face interviews were conducted beginning in July and concluding in September 1975. During that period, 607 interviews were completed.

Instrument:

The survey used one questionnaire for all interviews in two waves. This questionnaire, except for a few minor changes, was the same as that used in the 1973 study, so comparisons of 1973 and 1975 data could be made.

Explanation of Gross and Net Change

This report contains references both to gross change and net change between the initial interview in 1973 and the panel interview in 1975.

Gross change is the proportion of shoppers responding in different ways in 1973 and 1975. In this report, gross changes are the sum of two figures. For example:

Changes from a "negative" response in 1973 to a "positive" response in 1975, plus

Changes from a "positive" response in 1973 to a "negative" response in 1975.

Net change is the difference between the two figures.

Illustration:

22% of shoppers change from "negative" to "positive"

9% of shoppers change from "positive" to "negative"

(The remaining 69% of shoppers give the same answer both years -- either "positive" both years, or "negative" both years.)

Gross change = $22\% + 9\% = 31\%$

Net change = $22\% - 9\% = 13\%$

The net change of 13% is also the increase in percentage points in shoppers responding in a positive direction, as shown on the following page.

Example of Gross and Net Change

The following example can be used to develop gross and net change.

Table I
Prefer Nutrition Labeling

		1973		
		<u>Total</u>	<u>Yes</u>	<u>No</u>
1975	Total	100%	28%	72%
	Yes	41%	19%	(22%)
	No	59%	(9%)	50%

In this example, the top row represents total 1973 shoppers, those responding "yes" in 1973 (28%), and those responding "no" in 1973 (72%).

The left column represents total 1975 shoppers, those responding "yes" in 1975 (41%), and those responding "no" in 1975 (59%).

The two circled figures are the shoppers who changed:

22% from "no" in 1973 to "yes" in 1975

9% from "yes" in 1973 to "no" in 1975

The gross change, or sum of the two figures, is 31%.

The net change, or difference between the two figures, is 13%.

The net change of 13% is also the difference in percentage points in the overall distribution of shopper responses --

"Yes" answers increase from 28% to 41%

"No" answers decrease from 72% to 59%

Example of How to Read Tables in This Report

In our report, most tables follow this format:

Table II
Percent Preferring Nutrition Labeling

<u>1973</u>	<u>Same Response 1973 and 1975</u>	<u>1975</u>
28%	19%	41%

A full table of gross and net change can be developed using these three proportions.

Table III
Prefer Nutrition Labeling

		<u>1973</u>		
		<u>Total</u>	<u>Yes</u>	<u>No</u>
	Total	100%	28%	72%
1975	Yes	41%	19%	22%
	No	59%	9%	50%

This table is derived as follows:

Top row --

- 100% is the total panel.
- 28% said "yes" in 1973 (from Table
- 72% is the difference between 100% , nd is
the proportion who said "no" in 1973

Middle row --

- 41% said "yes" in 1975 (from Table II).
- 19% said "yes" in both 1973 and 1975 (from Table II).
- 22% said "no" in 1973 and "yes" in 1975, and can be
calculated by subtracting the percent saying "yes"
both years from the percent saying "yes" in 1975.

Bottom row --

- 59% said "no" in 1975, and is the difference between 100% and those saying "yes" in 1975.
- 9% said "yes" in 1973 and "no" in 1975, and can be calculated by subtracting the percent saying "yes" both years from the percent saying "yes" in 1973.
- 50% said "no" both years, and can be calculated by taking the difference between 100% and the sum of:
 - percent "yes" both years
 - percent "yes" 1973 and "no" 1975
 - percent "no" 1973 and "yes" 1975

HIGHLIGHTS

Nutrition Knowledge and Information

1. As in 1973, a nutrition knowledge score was calculated for panel respondents. More than four in ten shoppers scored differently in 1975 than in 1973. One-fourth of the panel shoppers scored higher, 18% scored lower, resulting in a net knowledge increase of 7%.

Younger shoppers gained more in nutrition knowledge than older shoppers. High socioeconomic status and college educated shoppers were also more likely to increase their nutrition knowledge.

2. Contrary to the actual knowledge score changes, college educated shoppers were likely to decrease their self-rating of nutrition knowledge while those with less than a high school education were likely to increase their self-rating.

Opinions about Food and Nutrition

3. Providing families with nourishment and saving money on food prices are two of the most important food-related concerns to shoppers both in 1973 and 1975.

The importance of providing families with nourishment actually increased 9% among panel shoppers.

4. About one-third of the panel shifted their beliefs about the equivalency of added and natural vitamins. The net result was a 3% increase in the proportion correctly responding that they were equally beneficial
5. The belief that a vitamin pill can make up for missing breakfast was rejected by the same proportion of shoppers each year (81%).
6. On an "index of food beliefs," about two-thirds of the shoppers scored differently in 1975 from 1973 -- 30% lower and 37% higher -- a net increase of 7%.
7. The shopper proportion believing that the federal government makes sure food advertising is honest increased from 58% to 65%. More than half of the panel shoppers changed answers between surveys.
8. Majorities of panel food shoppers believe the federal government should make sure that:
 - Packaged, canned, and frozen foods are safe to eat -- 98% -- no change between surveys.
 - Packaged, canned, and frozen foods are nutritious and good for you -- a 6% decrease between 1973 and 1975, 87% to 81%.
 - Food advertising is honest -- 97% in 1975, 98% in 1973.

Food Labels and Nutrition Labeling

9. Both in 1973 and 1975, brand names and prices claimed the attention of many food shoppers; of least consequence are recipes on the label and percentage of main ingredient. Sixteen percent and 14% more shoppers paid attention to date of expiration and nutritional value respectively.
10. Little change was noted in preferences for nutrition labeling over recipes or balanced meal information.

	<u>1973</u>	<u>1975</u>
- Prefer nutrition labeling over balanced meal information	65%	61%
- Prefer nutrition labeling over recipes	79%	81%

11. About half of the panel shoppers changed their opinions about the importance of having U. S. Recommended Daily Allowances of vitamins and of minerals on nutrition labels. On balance, the importance of each declined slightly.

	<u>1975 Less Important</u>	<u>1975 More Important</u>
U.S.R.D.A. for vitamins	26%	22%
U.S.R.D.A. for minerals	28%	23%

12. There was very little panel change in the perception of five possible benefits of nutrition labeling. Food shoppers still see one as more likely than others: helping to provide their families with more nutritious foods (25% in 1975).
13. Nor was there much change in panel shoppers' belief that they would use nutrition labels as a way to decide to buy a new brand.
14. With respect to willingness to pay something extra each week for having nutrition labels on food containers:

Twenty-two percent of panel shoppers would pay more in 1973 than they would in 1975.

Twenty-four percent would pay more in 1975 than in 1973.

Most likely to be willing to pay more were college educated shoppers (18% would pay less, 27% would pay more).

Use of Vitamins and Food Shopping Patterns

15. There was a 5% decline in incidence of vitamin usage (53% to 48%), primarily among low socioeconomic status respondents (46% to 32%).
16. Several consumer related in-store behaviors were reported more frequently by panel homemakers in 1975 than in 1973.

	<u>1973</u>	<u>1975</u>
- Looked for dates on products	54%	73%
- Looked for unit pricing	40%	50%
- Checked list of ingredients	43%	49%

17. About six of ten shoppers believed they could cut food costs and still maintain proper nourishment. This proportion remained almost static within the panel period.

I

Nutrition Knowledge and Information

- Self-concept of nutrition knowledge
- Nutrition knowledge score

1. SELF-CONCEPT OF NUTRITION KNOWLEDGE

As in 1973, shoppers were asked to rate their nutrition knowledge on a ten-point scale, with a rating of "1" representing the least amount of nutrition knowledge, and a rating of "10" being considered comparable to that of food scientists and other nutrition experts.

Among panel shoppers there was a very small increase in the proportion reporting a higher self-estimate of nutrition knowledge (+1%). Less educated shoppers were most likely to increase their self-rating of nutrition knowledge while men were most likely to decrease their self-estimate. Analysis of other subgroups reveals no consistent patterns of change.

Table 1

Self-Concept of Nutrition Knowledge by Subgroups*

	Panel Food Shoppers** (607)		
	Higher Self-rating	Lower Self-rating	Net Change 1973-1975
Panel food shoppers (607)	21%	20%	+ 1%
AGE			
18 - 34 (190)	24%	21%	+ 3%
35 - 49 (216)	19%	23%	- 4%
50 + (193)	21%	18%	+ 3%
SEX			
Male (56)	17%	28%	-11%
Female (551)	22%	20%	+ 2%
SOCIOECONOMIC STATUS			
Low (188)	26%	21%	+ 5%
Moderate (194)	20%	19%	+ 1%
High (225)	18%	21%	- 3%
EDUCATION			
Less than high school graduate (98)	28%	17%	+11%
High school graduate (343)	20%	21%	- 1%
College (164)	17%	21%	- 4%

Example of how to read table: In 1975, 21% of all panel shoppers rated themselves higher in nutrition knowledge than in 1973; 20% rated themselves lower.

*Basis for change is 1973 self-rating -- i.e., "Higher self-rating" = shoppers shifting from low to moderate and high groups, plus those from moderate to high groups. "Lower self-rating" = shoppers shifting from high self-concept to moderate and low groups, plus those moving from moderate to low.

**In 1975, 33% of the panel shoppers gave themselves a high self-rating, 48% gave themselves a moderate self-rating, and 19% a low self-rating.

2. NUTRITION KNOWLEDGE SCORE

In 1973 a nutrition knowledge quiz was developed to get a broad measure of nutrition knowledge among food shoppers. Although the quiz items were analyzed and subsequently revised substantially for the second nationwide study of nutrition knowledge, the identical quiz (from the 1973 study) was administered to panel respondents.*

Shoppers were divided into three groups -- low, moderate, and high nutrition knowledge. The analysis concentrated on movement between groups from 1973 to 1975.

One-fourth of the panel respondents shifted to a higher knowledge group while 18% shifted lower, a net knowledge increase of 7%. All demographic subgroups demonstrated some gains in nutrition knowledge, though some substantially more than others.

- Younger shoppers gained more in nutrition knowledge than older shoppers.
- Proportional gains in nutrition knowledge were most apparent within the high socioeconomic status group.
- Although there was a net 11% gain in self-concept of nutrition knowledge among less educated shoppers, actual increases in knowledge were most apparent in the college educated group.

*See "National Nutrition Survey, Questionnaire Item Analysis," October 1974, and "Food and Nutrition Knowledge and Beliefs," March 1974, prepared for Division of Consumer Studies, Food and Drug Administration, by Response Analysis Corporation.

Table 2
Nutrition Knowledge Score -- 1973-1975

	<u>Panel Food Shoppers* (607)</u>		
	<u>Increase</u>	<u>Decrease</u>	<u>Net Change 1973-1975</u>
Panel food shoppers (607)	25%	18%	+ 7%
AGE			
18 - 34 (190)	33%	19%	+14%
35 - 49 (216)	25%	20%	+ 5%
50 + (193)	21%	17%	+ 4%
SEX			
Male (56)	27%	24%	+ 3%
Female (551)	25%	18%	+ 7%
SOCIOECONOMIC STATUS			
Low (188)	22%	17%	+ 5%
Moderate (194)	26%	22%	+ 4%
High (225)	27%	16%	+11%
EDUCATION			
Less than high school graduate (98)	19%	13%	+ 6%
High school graduate (343)	27%	23%	+ 4%
College (164)	27%	14%	+13%

Example of how to read table: Twenty-five percent of all panel food shoppers increased their nutrition knowledge scores from 1973 to 1975, while 18% decreased their scores, a net total of 7% higher scores.

*In 1975, 31% of the panel shoppers had high scores, 33% had moderate scores, and 36% had low scores.

II.

Opinions about Food and Nutrition

- Beliefs held about food and nutrition
- Responsibility for nutrition

1. PREPARING NOURISHING AND ECONOMIC MEALS ARE STILL PRIME CONCERNS TO HOMEMAKERS.

The first series of questions in the interview attempted to put into perspective some of those concerns a shopper/homemaker might have:

- Nourishment for family
- Saving money on food prices
- Preparing enjoyable meals
- Finding time to prepare meals
- Cooking new and interesting dishes

As Table 3 shows, nourishment and saving money top the list of concerns both years.

Table 3
Food-Related Concerns -- 1973 and 1975

	Panel Food Shoppers (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
Most Important --				
Saving money on food prices	35%	18%	34%	- 1%
Preparing meals that my family will enjoy eating	17%	5%	12%	- 5%
Making sure that my family and I get the nourishment that we need	41%	28%	50%	+ 9%
Other response	6%	@	4%	- 2%

Example of how to read table: In 1973, 35% of the panel food shoppers selected "saving money" from a list of food-related concerns as their primary concern about food. Subtracting the proportion giving the same response both years (18%) from this figure ($35\% - 18\% = 17\%$), equals the proportion changing their response from "saving money" to another response on the panel interview. Similarly, taking the difference of the static figure, 18%, from the 1975 result, 34% ($34\% - 18\% = 16\%$) gives the proportion switching to "saving money" as a response in 1975.

@Less than .5%.

2. BELIEFS ABOUT FOOD AND NUTRITION

In the panel interview, food shoppers are as divided on the issue of natural vs. added vitamins as they were in 1973.

Slightly more shoppers believe added vitamin C is as beneficial as the natural vitamin (+3%). Much of the increase is due to this increased belief among less educated shoppers (+10%) and low socioeconomic status shoppers (+9%).

This question was characterized by shifts of one-third of the panel shoppers:

- Fifteen percent correctly believed in the nutritional equality of added vitamin C in 1973 but not in 1975.
- Eighteen percent incorrectly rejected the notion of nutritional equality of added vs. natural vitamin C in 1973 but accepted it in reinterview in 1975.

Table 4

Added Vitamin C Has the Same Benefit as Natural Vitamin C

	Panel Food Shoppers* (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
Panel food shoppers (607)	36%	21%	39%	+ 3%
AGE				
18 - 34 (190)	40%	22%	43%	+ 3%
35 - 49 (216)	41%	25%	38%	- 3%
50 + (193)	31%	17%	38%	+ 7%
SEX				
Male (56)	33%	17%	26%	- 7%
Female (551)	36%	21%	41%	+ 5%
SOCIOECONOMIC STATUS				
Low (188)	27%	14%	36%	+ 9%
Moderate (194)	37%	18%	36%	- 1%
High (225)	44%	29%	46%	+ 2%
EDUCATION				
Less than high school graduate (98)	26%	12%	36%	+10%
High school graduate (343)	35%	18%	37%	+ 2%
College (164)	47%	33%	46%	- 1%

*Percent "yes."

Most shoppers still do not feel that a vitamin pill can be substituted for breakfast.

In an attempt to discover something about how vitamins and their functions are perceived, respondents were asked if skipping breakfast can be made up for by taking a vitamin pill. Most said "no" in both interviews.

Table 5
If You Skip Breakfast, You Can Make Up for It
by Taking a Vitamin Pill

	Panel Food Shoppers* (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
Panel food shoppers (607)	81%	70%	81%	
AGE				
18 - 34 (190)	85%	77%	85%	
35 - 49 (216)	88%	75%	81%	- 7%
50+ (193)	76%	63%	79%	+ 3%
SEX				
Male (56)	73%	60%	82%	+ 9%
Female (551)	82%	71%	81%	- 1%
SOCIOECONOMIC STATUS				
Low (188)	69%	52%	69%	
Moderate (194)	85%	77%	87%	+ 2%
High (225)	89%	81%	89%	
EDUCATION				
Less than high school graduate (98)	64%	45%	63%	- 1%
High school graduate (343)	84%	75%	86%	+ 2%
College (164)	88%	80%	87%	- 1%

*Percent "no."

In 1975, a food beliefs index was developed for use in the second nationwide study of food and nutrition.

The index was developed as follows:

- 1 point -- "disagree" or "depends" response to: Most people can get enough nourishment if they just eat things they like.
- 1 point -- "disagree" with: Any food from the supermarket is good for you.
- 1 point -- "disagree" or "depends" response to: Between-meal foods are never as good for you as foods you get at regular meals.
- 1 point -- "disagree" with: Weighing the right amount means you are properly nourished.
- 1 point -- "agree" or "depends" response to: Canned or frozen vegetables are as nutritious as fresh vegetables.
- 1 point -- a "yes" response to: Is added vitamin C as beneficial as fresh vitamin C?

Shoppers were examined for shifts in their beliefs scores between measurement periods.

Overall, about two-thirds of the panel group scored differently on the two measures. However, there were 7% more shoppers scoring higher in 1975 than in 1973.

Demographic subgroup analysis reveals few consistent linear effects within any variable:

- Age: Only the middle age group decreased in score, while younger and older shoppers both had net increases of more than 10%.
- Sex: A large proportion of male shoppers scoring lower (16%) is contrasted with a 9% gain by female shoppers.
- Socioeconomic Status: One in ten shoppers in both high and low groups showed net score increases, while the middle group was stable.
- Education: All groups had higher beliefs scores, but almost twice as many high school graduates as others increased in score.

Table 6
Food Belief Index: 1973 and 1975

	<u>Panel Food Shoppers* (607)</u>		
	<u>Higher Score</u>	<u>Lower Score</u>	<u>Net Change 1973-1975</u>
Panel food shoppers (607)	37%	30%	+ 7%
AGE			
18 - 34 (190)	39%	28%	+11%
35 - 49 (216)	29%	36%	- 7%
50 + (193)	40%	27%	+13%
SEX			
Male (56)	20%	36%	-16%
Female (551)	38%	29%	+ 9%
SOCIOECONOMIC STATUS			
Low (188)	40%	30%	+10%
Moderate (194)	33%	34%	- 1%
High (225)	36%	26%	+10%
EDUCATION			
Less than high school graduate (98)	39%	34%	+ 5%
High school graduate (343)	37%	28%	+ 9%
College (164)	35%	30%	+ 5%

*In 1975, the panel shoppers' scores break down as follows: (6 points = the highest score, 0 points = the lowest score)

6 points - 8%	3 points - 23%	0 points - 1%
5 points - 23%	2 points - 13%	
4 points - 28%	1 point - 4%	

3. ASSIGNMENT OF RESPONSIBILITY FOR NUTRITION

The section in the interview dealing with responsibility for providing people with nutrition includes several questions:

- Who does the most now for making sure people get nutritious and well-balanced diets?
- Who should take more responsibility for making sure people get nutritious and well-balanced diets?
- Government participation relating to food and nutrition: what is believed to be the current situation and what is the desired situation?

About one-third of the shoppers shifted answers -- 7% more shoppers in 1975 than 1973 said the government makes sure that food advertising is honest. This awareness increased most among middle-aged shoppers (+14%), men (+12%), middle socioeconomic group (+11%) and middle education group (+11%).

Table 7

Does the Federal Government Make Sure that
Food Advertising is Honest?

	Panel Food Shoppers* (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
Panel food shoppers (607)	58%	45%	65%	+ 7%
AGE				
18 - 34 (190)	54%	42%	60%	+ 6%
35 - 49 (216)	57%	47%	71%	+14%
50 + (193)	61%	45%	64%	+ 3%
SEX				
Male (56)	64%	54%	76%	+12%
Female (551)	57%	44%	64%	+ 7%
SOCIOECONOMIC STATUS				
Low (188)	59%	42%	62%	+ 3%
Moderate (194)	55%	45%	66%	+11%
High (225)	59%	48%	67%	+ 8%
EDUCATION				
Less than high school graduate (98)	58%	39%	59%	+ 1%
High school graduate (343)	57%	46%	68%	+11%
College (164)	59%	46%	63%	+ 4%

*Percent "yes or think so."

While there was a moderate increase in the awareness of government action in the area of food advertising (+7%), there was no change in the proportion saying the government should be doing this. Nevertheless, an overwhelming majority still agrees the government should ensure that food advertising is honest (only 3% shifted responses on the panel interview).

Nor was any change detected in the belief that the federal government should make sure that packaged, canned, or frozen food is safe to eat. However, shoppers decreased their tendency to report that the federal government should make sure that packaged, canned, or frozen food is nutritious and good for you.

Table 8

Should the Federal Government Make Sure that Each
Packaged, Canned, or Frozen Food is Safe to Eat?

	Panel Food Shoppers (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
<u>Should be doing</u>	98%	96%	98%	
<u>Should not be doing</u>	1%	@	2%	+ 1%
Don't know/no answer	1%			- 1%

Table 9

Should the Federal Government Make Sure
that Each Packaged, Canned, or Frozen Food
is Nutritious and Good for You?

	Panel Food Shoppers (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
<u>Should be doing</u>	87%	74%	81%	- 6%
<u>Should not be doing</u>	10%	5%	16%	+ 6%
Don't know/no answer	3%		3%	

@Less than .5%.

Table 10

Should the Federal Government Make Sure
that Food Advertising is Honest?

	Panel Food Shoppers (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
<u>Should</u> be doing	98%	96%	97%	- 1%
<u>Should not</u> be doing	1%	1%	1%	.
Don't know/no answer	0		1%	+ 1%

^aLess than .5%.

III.

Nutrition Labeling

- Reactions to nutrition labeling
- Perceived benefits of nutrition labels
- Evaluation of nutrition labels

BOTH IN 1973 AND IN 1975, BRAND NAMES AND PRICES CLAIM THE ATTENTION OF MOST FOOD SHOPPERS: OF LEAST CONSEQUENCE ARE RECIPES ON THE LABEL AND PERCENTAGE OF MAIN INGREDIENT.

Before nutrition labeling was introduced into each interview, food shoppers were asked to select from a card those items which food companies include on some or all labels now, items which they -- the food shoppers -- pay attention to, and items which they could get along without.

Majorities paid attention to brand name and price on both interviews. A substantial proportion of shoppers changed answers from 1973 to the panel interview. In 1975:

- Sixteen percent more respondents say they pay attention to date of manufacture or expiration.
- Fourteen percent more shoppers pay attention to nutritional value.
- Eight percent more shoppers pay attention to ingredient amounts.

Table 11
Items on "All or Some Food Labels" Which Food Shoppers
Pay Attention to -- 1973 and 1975

	Panel Food Shoppers (607)			
	Pay Attention to (1973)	Same Response 1973 and 1975	Pay Attention to (1975)	Net Change 1973-1975
Total price	74%	56%	73%	- 1%
Brand name	58%	36%	54%	- 4%
Date of manufacture or expiration	43%	29%	59%	+16%
Listing of ingredients	42%	24%	47%	+ 5%
Net weight or volume	43%	23%	43%	
Food additives, preservatives	29%	16%	32%	+ 3%
Unit price (price per pound or ounce)	28%	13%	30%	+ 2%
Nutritional value (calo- ries, vitamins, minerals)	27%	16%	41%	+14%
Number of servings	22%	10%	28%	+ 6%
Percentage of main ingredient	20%	4%	19%	- 1%
Amounts of ingredients	18%	7%	26%	+ 8%
Recipes	11%	3%	11%	
None of them	1%		0	- 1%
No opinion	1%		0	- 1%

(Each column adds to more than 100% because of multiple responses.)

0 Less than .5%.

1. NUTRITION LABELING

A main objective of the 1973 study was to establish baseline data for consumer response to nutrition labeling before many food companies included such labels on their packages, and before the possible benefits of nutrition labeling were communicated through FDA-sponsored advertising to consumers.

The concept of nutrition labeling was a novelty to most shoppers in 1973 and had only recently been introduced prior to the time of the panel reinterview.

We have here reported those items where some change is observed.

- Importance of having percentage of U. S. Recommended Daily Allowance of each vitamin a food contains.
- Importance of having percentage of U. S. Recommended Daily Allowance of each mineral a food contains.
- Preference for nutrition labeling or recipes on package label.
- Preference for nutrition labeling or information on balanced meal on package label.
- Likelihood of making use of nutrition labeling.
- Willingness to pay for nutrition labeling.

Table 12-A

Preference on Food Package Labels:
Nutrition Labeling or Foods to Serve with One in Package
to Make a Well-balanced Meal

	Panel Food Shoppers (607)					
	1973					
	Total	Nutrition Labeling	Balanced Meal Information	Both	Neither	No Opinion/No Answer
<u>1975</u>						
Total	100%	65%	20%	8%	2%	5%
Nutrition labeling	61%	47%	8%	3%	1%	2%
Balanced meal information	26%	11%	10%	3%		2%
Both	8%	5%	1%	1%	@	@
Neither	2%	1%	@	@	@	
No opinion/no answer	3%	@	1%	1%		1%

Example of how to read table: Forty-seven percent of the panel shoppers preferred nutrition labeling in both interviews, while 11% who preferred labeling in 1973 reported a preference for balanced meal information in 1975. Each cell entry is a percent of the total panel.

@Less than .5%.

Although shoppers still prefer nutrition labeling over balanced meal information, the proportion doing so decreased by 4% while those favoring balanced meal information increased by 6%. This represents an overall shift toward balanced meal information from 65%-20% in 1973 (a 45% spread) to 61%-26% (a 35% spread).

Table 12-B

Preference on Food Package Labels:Nutrition Labeling or Foods to Serve with One in PackageTo Make a Well Balanced MealPanel Food Shoppers (607)

	<u>Nutrition Labeling</u>			<u>Balanced Meal Information</u>			<u>Both</u>		
	<u>1973</u>	<u>1975</u>	<u>Net Change 1973-1975</u>	<u>1973</u>	<u>1975</u>	<u>Net Change 1973-1975</u>	<u>1973</u>	<u>1975</u>	<u>Net Change 1973-1975</u>
Panel food shoppers (607)	65%	61%	- 4%	20%	26%	+ 6%	8%	8%	
AGE									
18 - 34 (190)	66%	69%	+ 3%	20%	21%	+ 1%	8%	7%	- 1%
35 - 49 (216)	71%	62%	- 9%	18%	27%	+ 9%	9%	8%	- 1%
50 + (193)	60%	57%	- 3%	21%	27%	+ 6%	6%	9%	+ 3%
SEX									
Male (56)	66%	54%	- 8%	14%	21%	+ 7%	8%	14%	+ 6%
Female (551)	65%	62%	- 3%	20%	26%	+ 6%	8%	8%	
SOCIOECONOMIC STATUS									
Low (188)	50%	51%	+ 1%	29%	32%	+ 3%	10%	7%	- 3%
Moderate (194)	66%	58%	- 8%	19%	27%	+ 8%	6%	12%	+ 6%
High (225)	80%	75%	- 5%	11%	18%	+ 7%	6%	6%	
EDUCATION									
Less than high school graduate (98)	44%	38%	- 6%	28%	41%	+13%	11%	8%	- 3%
High school graduate (343)	67%	66%	- 1%	20%	23%	+ 3%	8%	8%	
College (164)	78%	71%	- 7%	13%	20%	+ 7%	5%	9%	+ 4%

Table 13-A
Preference on Food Package Labels:
Nutrition Labeling or Recipes

	Panel Food Shoppers (607)					
	1973					
	Total	Nutrition Labeling	Recipes	Both	Neither	No Opinion/ No Answer
<u>1975</u>						
Total	100%	79%	11%	5%	2%	3%
Nutrition labeling	81%	68%	6%	4%	1%	2%
Recipes	8%	4%	3%	1%		1%
Both	6%	5%		1%	1%	@
Neither	3%	2%	1%			@
No opinion/no answer	2%	1%		@		@

Example of how to read table: Sixty-eight percent of the panel shoppers preferred nutrition labeling in both interviews, while 4% who preferred labeling in 1973 preferred recipes in 1975. Each cell entry is a percent of the total panel.

@Less than .5%.

On being reinterviewed in 1975, respondents again overwhelmingly preferred nutrition labeling over recipes on food package labels. The proportion doing so increased by 2%, while that preferring recipes decreased by 3%. This represents decreases across all but one subgroup in the proportion reporting a preference for recipes.

Table 13-B

Preference on Food Package Labels:
Nutrition Labeling or Recipes

Panel Food Shoppers (607)									
	<u>Prefer Labeling</u>		<u>Net Change 1973-1975</u>	<u>Prefer Recipes</u>		<u>Net Change 1973-1975</u>	<u>Want Both</u>		<u>Net Change 1973-1975</u>
	<u>1973</u>	<u>1975</u>		<u>1973</u>	<u>1975</u>		<u>1973</u>	<u>1975</u>	
Panel food shoppers (607)	79%	81%	+ 2%	11%	8%	- 3%	5%	6%	+ 1%
AGE									
18 - 34 (190)	83%	82%	- 1%	7%	9%	+ 2%	5%	5%	
35 - 49 (216)	83%	82%	- 1%	10%	8%	- 2%	5%	7%	+ 2%
50 + (193)	74%	79%	+ 5%	13%	8%	- 5%	5%	7%	+ 2%
SEX									
Male (56)	77%	75%	- 2%	11%	9%	- 2%	3%	6%	+ 3%
Female (551)	80%	82%	+ 2%	11%	8%	- 3%	5%	6%	+ 1%
SOCIOECONOMIC STATUS									
Low (188)	73%	76%	+ 3%	15%	10%	- 5%	4%	5%	+ 1%
Moderate (194)	80%	82%	+ 2%	8%	7%	- 1%	6%	7%	+ 1%
High (225)	85%	85%		8%	7%	- 1%	5%	7%	+ 2%
EDUCATION									
Less than high school graduate (98)	67%	73%	+ 6%	20%	14%	- 6%	3%	4%	+ 1%
High school graduate (343)	82%	85%	+ 3%	9%	7%	- 2%	6%	5%	- 1%
College (164)	85%	80%	- 5%	7%	7%		5%	11%	+ 6%

Since 1973, the importance of having the percent of U. S. Recommended Daily Allowance of vitamins decreased among 26% of food shoppers in the panel and increased among 22%, an overall decrease of 4%.

Proportional net differences varied by demographic subgroup.

- Slight gain in importance among youngest shoppers (+2%), and decrease among those 35 and older.
- Low socioeconomic status respondents reported a net change of -8%, while moderate and high status shoppers reported net changes of -3%.
- A substantial shift in importance took place among the least educated shoppers with 31% saying it was less important and 26% saying more important.

Table 14

Importance of Having Percent U. S. Recommended
Daily Allowance of Vitamins on Nutrition Label

	Panel Food Shoppers (607)		
	Gain in Importance 1973-1975	Decrease in Importance 1973-1975	Net Change 1973-1975
Panel food shoppers* (607)	22%	26%	- 4%
AGE			
18 - 34 (190)	24%	22%	+ 2%
35 - 49 (216)	21%	28%	- 7%
50 + (193)	22%	27%	- 5%
SEX			
Male (56)	33%	24%	+ 9%
Female (551)	21%	26%	- 5%
SOCIOECONOMIC STATUS			
Low (188)	23%	31%	- 8%
Moderate (194)	19%	22%	- 3%
High (225)	24%	27%	- 3%
EDUCATION			
Less than high school graduate (98)	26%	31%	- 5%
High school graduate (343)	21%	23%	- 2%
College (164)	24%	27%	- 3%

*In 1975, 46% of the panel shoppers responded "very important," 29% said "somewhat important," and 25% said "not too important" or gave no opinion.

The results were nearly identical regarding percent of U. S. Recommended Daily Allowance of minerals on nutrition labels; more shoppers on the 1975 panel interview said it was less important than did in 1973.

All subgroups reported such decreases.

Table 15

Importance of Having Percent U. S. Recommended Daily Allowance
of Minerals on Nutrition Label

	Panel Food Shoppers (607)		
	Gain in Importance 1973-1975	Decrease in Importance 1973-1975	Net Change 1973-1975
Panel food shoppers* (607)	23%	28%	- 5%
AGE			
18 - 34 (190)	25%	26%	- 1%
35 - 49 (216)	21%	26%	- 5%
50 + (193)	23%	30%	- 7%
SEX			
Male (56)	25%	26%	- 1%
Female (551)	23%	28%	- 5%
SOCIOECONOMIC STATUS			
Low (188)	23%	29%	- 6%
Moderate (194)	21%	26%	- 5%
High (225)	26%	29%	- 3%
EDUCATION			
Less than high school graduate (98)	27%	30%	- 3%
High school graduate (343)	21%	26%	- 5%
College (164)	26%	31%	- 5%

*In 1975, 40% of the panel shoppers responded "very important," 32% said "somewhat important," and 28% said "not too important" or gave no opinion.

Both in 1973 and 1975, large majorities of shoppers said that they would use nutrition labeling as an aid in deciding whether to try a new brand. There is a small net increase (2%) in the proportion saying "yes" to this question.

Younger shoppers (under 50) and high socioeconomic status respondents reported an increased willingness to utilize nutrition labeling in this decision-making process.

Table 16
Would Make Use of Nutrition Label as a Way
to Decide Whether to Buy a New Brand

	Panel Food Shoppers* (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
Panel food shoppers (607)	76%	64%	78%	+ 2%
AGE				
18 - 34 (190)	80%	71%	85%	+ 5%
35 - 49 (216)	78%	69%	83%	+ 5%
50 + (193)	71%	57%	71%	
SEX				
Male (56)	71%	59%	78%	+ 7%
Female (551)	76%	65%	78%	+ 2%
SOCIOECONOMIC STATUS				
Low (188)	69%	52%	68%	- 1%
Moderate (194)	80%	70%	82%	+ 2%
High (225)	78%	71%	84%	+ 6%
EDUCATION				
Less than high school graduate (98)	63%	42%	61%	- 2%
High school graduate (343)	79%	72%	86%	+ 7%
College (164)	78%	66%	78%	

*Percent "Yes."

OF FIVE SUGGESTED POSSIBLE BENEFITS OF NUTRITION LABELING, FOOD SHOPPERS SEE ONE OF THEM AS MORE LIKELY THAN THE OTHERS: HELPING TO PROVIDE THEIR FAMILIES WITH MORE NUTRITIOUS FOODS.

Little difference can be noted from comparisons of findings from the initial measurement to the panel reinterview.

Shoppers do not show increased confidence in government protection of consumers -- e.g., a 4% proportional increase in reporting more confidence in government protection as a least likely effect of nutrition labeling.

Table 17
Evaluation of Five Suggested Benefits
of Nutrition Labeling

Nutrition Labeling Will . . .	Panel Food Shoppers (607)							
	Most Likely				Least Likely			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
Help me to provide my family with more nutritious foods	28%	11%	25%	- 3%	8%	1%	9%	+ 1%
Probably increase my knowledge about nutrition in general	19%	5%	22%	+ 3%	29%	10%	27%	- 2%
Make food manufacturers produce food which is more nutritious	19%	5%	18%	- 1%	21%	7%	22%	+ 1%
Give me confidence that the government is protecting me as a consumer	16%	5%	18%	+ 2%	12%	3%	16%	+ 4%
Give me more confidence in the food I buy	14%	3%	12%	- 2%	17%	4%	16%	- 1%
No opinion	4%	1%	3%	- 1%	12%	0	4%	- 8%

0Less than .5%.

SLIGHTLY MORE SHOPPERS ARE WILLING TO PAY MORE FOR NUTRITION LABELING
IN 1975 THAN WERE WILLING IN 1973.

We were interested in assessing changes in willingness to pay for nutrition labeling among both those willing and unwilling to pay in 1973.

Two groups compared on the table below are:

- Shoppers unwilling to pay for nutrition labeling in 1973 and willing to pay in 1975; and those who would have paid 10¢ or 30¢ in 1973 and are willing to pay more in 1975.
- Those shoppers who, in 1973, were willing to pay at least 10¢, who are unwilling to pay anything at all in 1975.

Table 18

Would be Willing to Pay for Nutrition Labeling

	<u>Willing to Pay More in 1973 Than in 1975</u>	<u>Would Pay More in 1975 Than in 1973</u>	<u>Change in Willing to Pay More 1973-1975</u>
Panel food shoppers (607)	22%	24%	+ 2%
AGE			
18 - 34 (190)	20%	25%	+ 5%
35 - 49 (216)	24%	24%	
50+ (193)	22%	23%	+ 1%
SEX			
Male (56)	32%	16%	-16%
Female (551)	21%	25%	+ 4%
SOCIOECONOMIC STATUS			
Low (188)	23%	26%	+ 3%
Moderate (194)	26%	19%	- 7%
High (225)	19%	26%	+ 7%
EDUCATION			
Less than high school graduate (98)	25%	23%	- 2%
High school graduate (343)	23%	23%	
College (164)	18%	27%	+ 9%

IV.

- Use of vitamins
- Food shopping patterns

1. VITAMINS

About half of panel food shoppers report vitamin usage in the family
-- about 5% fewer in 1975 than in 1973.

One-fourth of the panel members switched reporting groups -- 15% were 1973 vitamin users and became non-users, and 10% were 1973 vitamin non-users and became users.

Differences among shopper subgroups in vitamin consumption, comparing the two measurements are:

- Younger shoppers increased in reported family usage of vitamins, middle-aged and older shoppers reported 7% and 8% declines respectively.
- Less educated respondents decreased dramatically in the proportion of family use of vitamins.
- Low socioeconomic status group also decreased substantially in vitamin usage.

Table 19

Differences in Vitamin Consumption by Subgroups 1973, 1975

	Panel Food Shoppers (607)			
	Someone in Family Takes Vitamins			Net Change 1973-1975
	1973	Same Response 1973 and 1975	1975	
Panel food shoppers (607)	53%	38%	48%	- 5%
AGE				
18 - 34 (190)	59%	45%	61%	+ 2%
35 - 49 (216)	55%	39%	48%	- 7%
50 + (193)	48%	33%	40%	- 8%
SEX				
Male (56)	41%	25%	37%	- 4%
Female (551)	55%	40%	49%	- 6%
SOCIOECONOMIC STATUS				
Low (188)	46%	24%	32%	-14%
Moderate (194)	55%	44%	56%	+ 1%
High (225)	58%	46%	57%	- 1%
EDUCATION				
Less than high school graduate (98)	42%	20%	29%	-13%
High school graduate (343)	54%	39%	49%	- 5%
College (164)	60%	49%	59%	- 1%

2. FOOD SHOPPING PATTERNS

We looked at several areas within the broad topic of food shopping patterns:

- Open dating
- Unit price awareness
- Use of ingredient list on label
- Attitude toward balance of food costs and proper nutrition

OPEN DATING WAS SOUGHT BY CONSIDERABLY MORE SHOPPERS IN 1975 THAN IN 1973.

Only slightly more than half of panel shoppers looked for open dating their last shopping trip before the 1973 interview; nearly three-quarters did so in 1975, 19% more shoppers.

The proportion of shoppers who looked for unit pricing the last time they shopped increased by 10% over 1973. Nearly four in ten shoppers were either unaware of or not sure about unit pricing -- this proportion decreased to 30% in 1975.

Finally, there was a 6% increase in the proportion of shoppers saying they checked the list of ingredients on a food product.

There were few demographic subgroup differences among any of these three items.

Table 20
Reported In-store Behavior

	<u>Panel Food Shoppers* (607)</u>			
	<u>1973</u>	<u>Same Response 1973 and 1975</u>	<u>1975</u>	<u>Net Change 1973-1975</u>
Looked for dates on products	54%	48%	73%	+19%
Looked for unit pricing	40%	27%	50%	+10%
Checked list of ingredients	43%	28%	49%	+ 6%

*Percent "Yes."

The belief that they could cut food costs and still maintain proper nourishment changed only slightly from 1973 to 1975 (+2%).

Food shoppers who changed the most were:

- The middle socioeconomic status group which recorded a decline in this belief, bringing it into closer alignment with the low socioeconomic group regarding this issue.
- The lowest education group and the highest socioeconomic group which established a 10% and 7% increase, respectively, in this belief.

Table 21

Food Shopper Beliefs on Whether They Could Cut
Food Costs and Still Maintain Proper Nourishment

	Panel Food Shoppers* (607)			
	1973	Same Response 1973 and 1975	1975	Net Change 1973-1975
Panel food shoppers (607)	59%	43%	61%	+ 2%
AGE				
18 - 34 (190)	60%	45%	62%	+ 2%
35 - 49 (216)	64%	51%	66%	+ 2%
50 + (193)	56%	35%	57%	+ 1%
SEX				
Male (56)	51%	26%	49%	- 2%
Female (551)	60%	45%	62%	+ 2%
SOCIOECONOMIC STATUS				
Low (188)	45%	28%	49%	+ 4%
Moderate (194)	64%	41%	57%	- 7%
High (225)	69%	58%	76%	+ 7%
EDUCATION				
Less than high school graduate (98)	37%	22%	47%	+10%
High school graduate (343)	62%	43%	60%	- 2%
College (164)	72%	59%	75%	+ 3%

*Percent "Yes, could cut costs."

APPENDIX

- A. Guide to Statistical Significance of Survey Results
- B. Panel Effects
- C. Research Methodology
 - Research Methods
 - Interviewing Experience
 - Knowledge Scoring

A. Guide to Statistical Significance of Survey Results

Results of all surveys based on a sample of a population are subject to sampling tolerances. The probable limits of such tolerances can be estimated by standard statistical methods. The sampling tolerances vary with the size of the sample and the size of the percentages. For example, in a sample of 600 interviews, if an observed percentage result is 60%, the chances are approximately 95 in 100 that the range 56% to 64% includes the true percentage for the entire universe.

<u>Size of Sample</u>	<u>Approximate Sampling Tolerances</u>				
	<u>10% or 90%</u>	<u>20% or 80%</u>	<u>30% or 70%</u>	<u>40% or 60%</u>	<u>50%</u>
600	3%	4%	5%	5%	5%
550	3%	4%	5%	5%	5%
350	4%	5%	6%	7%	7%
200	5%	7%	8%	9%	9%
150	6%	8%	9%	10%	10%
100	7%	10%	11%	12%	12%
50	10%	14%	16%	17%	17%

Tolerances are also involved in the comparison of results from two subgroups of respondents covered by the study, such as adults with less than a high school education (98) and those with a high school education (343). If an observed percentage result is at or near 60% for one group and 50% for the other, and one wanted to compare the two groups, there would have to be a difference of at least 11% in order for it to be considered a real difference and not based on chance alone. The reader should note that all subgroup comparisons were made using two-tailed tests of significance.

Size of Samples Compared	Differences Required for Significance				
	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
550 and 350	5%	7%	8%	9%	9%
200	6%	8%	9%	10%	10%
150	7%	9%	10%	11%	11%
100	8%	11%	13%	14%	14%
50	11%	15%	17%	18%	20%
350 and 200	7%	9%	10%	11%	11%
150	7%	9%	11%	12%	12%
100	9%	11%	13%	14%	14%
50	11%	15%	17%	18%	19%
200 and 150	8%	11%	12%	13%	13%
100	9%	12%	14%	15%	15%
50	12%	15%	18%	19%	19%
150 and 100	10%	13%	14%	16%	16%
50	12%	16%	18%	20%	20%
100 and 50	13%	17%	19%	21%	21%

One mode of analysis which could be employed is the "turnover table" which cross-tabulates a given characteristic at more than one point in time. This tests whether the observed proportion of changers is significantly different than .5. This statistic is:

$$z = \frac{\bar{X} - p}{\sqrt{\frac{p(1-p)}{N}}}$$

Where $\bar{X}$ = proportion shifting in one direction

$p = .5$

N = sample size

$P \leq .05$ if $z \geq 1.96$

$P \leq .01$ if $z \geq 2.58$

B. Panel Effects

In the introduction we alluded to the possible presence of a bias known as panel effect. Proper interpretation of these data must include some recognition of the potential biases on the results. What might appear to be a significant change (or no change at all) might actually be caused by participation in the research or other factors. We are here primarily concerned with the potential biases resulting from being interviewed previously or panel effect.

Panel effect -- one risk of repeated interviews with respondents is that they may be made more sensitive to the subject matter through mere participation in the research. The best means of assessing panel sensitization or contamination is through comparisons with people who were not previously interviewed. All panel respondents had been interviewed once before in the first nationwide study and again in 1975. There also exists an unpretested or new group of respondents for comparison purposes -- the 1975 second nationwide survey respondents.

Assessing overall panel effect involves a comparison of the panel group with a control group (1975 survey respondents).

	Measurement Period	
	1973	1975
Panel	X	X
Second nation- wide survey		X
		} Comparison groups

There were six questions in both the panel survey and second national survey available for direct comparison.

- Preference for nutrition labeling or information about balanced meals
- Preference for nutrition labeling or recipes
- Attention to open dating
- Attention to unit pricing
- Attention to listing of ingredients
- Knowledge that added vitamin C is as beneficial as the natural vitamin

Findings

Panel respondents had higher proportions in the primary answer category in five of the six questions. In one question dealing with respondent perception of the nutritional equality of added versus natural vitamin C, a knowledge question, panel shoppers were more likely to agree that the added vitamin was as good as the natural. (Q. 26)

	<u>Panel (607)</u>	<u>Second Nation- wide Survey (1664)</u>
Yes	39% ← 9% → 30%	
No	50	62
Qualified answer	2	2
Don't know	8	7

(1973 panel "yes" -- 36%)

(1973 independent "yes" -- 34%)

Panel shoppers also were more likely than the 1975 survey shoppers to report preferences of nutrition labeling over recipes and balanced meal information.

Preference of nutrition labeling or balanced meal information. (Q. 46)

	<u>Panel (607)</u>	<u>Second Nation- wide Survey (1664)</u>
Prefer nutrition label	61% ← 19% → 42%	
Prefer balanced meal information	26	37
Want both	8	12
Want neither	2	4

(1973 panel "prefer label" -- 65%)

(1973 independent "prefer label" -- 64%)

Preference of nutrition labeling or recipes. (Q. 45)

	<u>Panel (607)</u>	<u>Second Nation- wide Survey (1664)</u>
Prefer nutrition label	81% ← 23% → 58%	
Prefer recipes	8	17
Want both	6	16
Want neither	3	4
(1973 panel "prefer label" -- 79%)		
(1973 independent "prefer label" -- 79%)		

Panel members also had a higher tendency to report looking for unit pricing.
(Q. 11)

	<u>Panel (607)</u>	<u>Second Nation- wide Survey (1664)</u>
Looked for unit pricing	50% ← 9% → 41%	
(1973 panel -- 40%)		
(1973 independent -- 42%)		

On other preference data, the responses were closer.

Looked for dates on products. (Q. 9)

	<u>Panel (607)</u>	<u>Second Nation- wide Survey (1664)</u>
Looked for dates on products	73% ← 2% → 75%	
(1973 panel -- 54%)		
(1973 independent -- 57%)		

Checked list of ingredients. (Q. 12)

	<u>Panel (607)</u>	<u>Second Nation- wide Survey (1664)</u>
Checked list of ingredients	50% ← 4% → 46%	
(1973 panel -- 43%)		
(1973 independent -- 42%)		

The two labeling preference questions and the added versus natural vitamin question all reflect some panel effect. In this instance, the panel data are relatively stable across measurement periods while the two independent samples reflect substantial change. The experience of being interviewed appears to act as a stabilizing factor on subsequent response and, as such, is a good predictor of later response. Whatever real change took place among the population (as indicated by comparing 1973 and 1975 independent samples) is not reflected in the panel.

The other result with significant panel bias is "looking for unit pricing." It is reasonable to assume the inflation in the 1975 panel response to be a result of the previous interview. The bias is not lessened when adjusting for initial interview response and must, then, be panel effect.

Only the one question dealing with open dating is clearly free from any panel bias. There is a significant increase in looking for open dating within the panel shoppers, from 54% to 73%. The 1975 panel figure, 73%, is nearly identical to the 1975 independent sample result, 75%.

Care should be taken when generalizing from either the preference or knowledge data where the effect of prior interviewing appears to predict subsequent response. The reader should also note the other instance of possible effect mentioned above -- that increased awareness could set from prior interviewing and be behaviorally manifested -- e.g., looking for unit pricing. This is, however, a panel analysis -- one where the topic of interest is internal change as well as net change. The interpretability of gross change is unaffected. The interpretation of net effects or changes should be tempered with reader knowledge of panel contamination.

C. Research Methodology: Research Methods,
Interviewing Experience, Knowledge Scoring

Sample Design for the 1973 Study

The Response Analysis Corporation national probability sample was used for this study. Sample locations and households were specified by the sample plan and in instructions to interviewers. None of the selection steps was left to the discretion of the interviewer.

The sample design included the following study requirements:

- A national sample of homemakers or persons most responsible for the food shopping in the household -- referred to as the "main food shopper."
- A larger sample of the younger homemakers, 18 to 49 years of age, than would naturally occur in a probability sample.

This was accomplished by sampling the older group at half the rate at which it normally occurs. The undersampling of the 50+ age group was compensated for by appropriate weights in the computer processing of the study results so that total survey results would reflect the actual distribution of younger and older adults in the study population, i.e., chief food shoppers.

The sequence of steps used in the development of the sample included:

- Selection of a national sample of 103 primary areas (counties or groups of counties) stratified by geographic region, type of community, and other population characteristics.
- Selection of 600 interviewing locations or secondary areas (Census enumeration districts or block groups) for the national sample.
- Selection of specific sample segments in each interviewing location for field administration of the survey.
- Screening of sample households to determine whether or not there was a main food shopper in the household, and the shopper's age.

Detail on each of these steps is provided in Food and Nutrition: Knowledge, Beliefs, 1974.

Sample Design for the 1975 Panel Study

A random selection of the 1500, 1973 main food shoppers was employed for the panel. The sample design included specifications that the selection be equally distributed among the three knowledge propensity groups. To accomplish this, respondents were stratified by high, medium and low nutrition knowledge calculated from a series of questions which tested nutrition knowledge. This was administered in the 1973 questionnaire. More details on the scoring procedures can be found on page 46. Each of the propensity groups was listed in order, first by location, then housing unit number. Intervals for selection were calculated and a sample of 900 respondents was selected, 300 from each group.

A supplement of 170 respondents was selected at a later time to compensate for the respondents who had dropped out of the sample.

Interviewing Experience

Respondents assigned	1,070
Moved or unable to locate	245
Eligible for interview	825

Interview Completion Experience

Eligible respondents	825
Interviews included in analysis	607
Households not completed	
Refused	105
No one at home, other incomplete	113

74% Completion Rate

Verification of Completed Materials

<u>Interviews Used</u> <u>in Analysis</u>	<u>Number</u> <u>Verified</u>
607	103

Data Processing and Weighting

The 1973 weight factors were applied in the processing of the survey data. These weights were to compensate for the undersampling of homemakers age 50 or older and for differences in completion rate among interviewing locations.

1. Age weighting

Homemakers age 50 or older were weighted up by a factor of two.

2. Location weighting

Weights were assigned to compensate for differences in interview completion rates among interviewing locations. The weight factor for each location was proportionate to the number of estimated eligible respondents in each location.

The panel weighted data was compared with the 1973 survey data on the following characteristics:

- Knowledge score
- Age
- Sex
- Education
- Region

No significant differences were observed and it was determined that no further weighting was needed.

Description of Analysis Variables for 1973 and 1975 Data

Region

- States grouped as Northeast (Census classifications of New England and Middle Atlantic):

Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania

- States grouped as North Central (Census classifications of East North Central and West North Central):

Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

- States grouped as South (Census classifications of South Atlantic, East South Central, and West South Central):

Delaware, Maryland, District of Columbia, Virginia,
West Virginia, North Carolina, South Carolina,
Georgia, Florida, Kentucky, Tennessee, Alabama,
Mississippi, Arkansas, Louisiana, Oklahoma, Texas

- States grouped as West (Census classifications of Mountain and Pacific):

Montana, Idaho, Wyoming, Colorado, New Mexico,
Arizona, Utah, Nevada, Washington, Oregon, Cali-
fornia

Population Density

Large metro area includes the top 25 Standard Metropolitan Sta-
tistical Areas (SMSA):

New York	Newark
Los Angeles	Minneapolis-St. Paul
Chicago	Dallas
Philadelphia	Anaheim-Garden Grove-Santa Ana
Detroit	Seattle
San Francisco	Milwaukee
Washington	Cincinnati
Boston	Atlanta
Pittsburgh	Paterson-Clifton-Passaic
St. Louis	Buffalo
Baltimore	San Diego
Cleveland	Miami
Houston	

Nutrition Knowledge Score

High = 108+ points

Medium = 94 - 107 points

Low = 0 - 93 points

Score based on following:

Is there one particular food adults need to be healthy?

Yes = 0

No = 1

Not reported = 0

Can a person stay healthy if he/she is a vegetarian?

Yes = 1

No = 0

Not reported = 0

Is added vitamin C as beneficial as fresh vitamin C?

Yes = 1

No = 0

Not reported = 0

On the following items, respondents were given 1 point for each correct answer selected and 1 point for each incorrect answer which was not selected.

Correct answers are circled.

Nutrients that are easy for the body to get:

- 1 Vitamin A
- ② Thiamin (Vitamin B₁)
- ③ Riboflavin (Vitamin B₂)
- ④ Niacin
- 5 Vitamin C
- 6 Vitamin D
- 7 Vitamin E (not included in score)
- ⑧ Protein
- ⑨ Carbohydrates
- ⑩ Fat
- ⑪ Calories
- 12 Iron
- 13 Calcium

All = 7 points

None = 5 points

Not sure = 0 points

Nutrients that are hard for the body to get:

- ① Vitamin A
- 2 Thiamin (Vitamin B₁)
- 3 Riboflavin (Vitamin B₂)
- 4 Niacin
- ⑤ Vitamin C
- ⑥ Vitamin D
- 7 Vitamin E (not included in score)
- 8 Protein
- 9 Carbohydrates
- 10 Fat
- 11 Calories
- ⑫ Iron
- ⑬ Calcium

All = 5 points

None = 7 points

Not sure = 0 points

Nutrients that are stored by the body:

- ① Vitamin A
- 2 Thiamin (Vitamin B₁)
- 3 Riboflavin (Vitamin B₂)
- 4 Niacin
- 5 Vitamin C
- ⑥ Vitamin D
- ⑦ Vitamin E
- 8 Protein
- 9 Carbohydrates
- ⑩ Fat
- ⑪ Calories
- ⑫ Iron
- ⑬ Calcium

All = 7 points

None = 6 points

Not sure = 0 points

Things $\left. \begin{array}{l} \text{milk} \\ \text{beef} \\ \text{green peas} \\ \text{bread} \end{array} \right\}$ does for the body:

	<u>Milk</u>	<u>Beef</u>	<u>Green Peas</u>	<u>Bread</u>
For the eyes	1	1	(1)	1
For strong teeth and bones	(2)	2	2	2
Builds muscle tissue	(3)	(3)	(3)	3
To repair body tissues	(4)	(4)	(4)	4
Builds blood cells	5	(5)	(5)	(5)
Fights infections	6	6	(6)	6
For the nervous system	(7)	7	(7)	(7)
For healthy skin	(8)	(8)	(8)	(8)
For proper growth of children	(9)	(9)	(9)	(9)
None of the above =	3 points	4 points	1 point	5 points
Don't know or no answer -- points assigned to entire question =	0	0	0	0

Milk
Beef
Green peas
Bread

} is a source of:

	<u>Milk</u>	<u>Beef</u>	<u>Green Peas</u>	<u>Bread</u>
Vitamin A	1	1	(1)	1
Thiamin (Vitamin B ₁)	2	2	(2)	(2)
Riboflavin (Vitamin B ₂)	(3)	(3)	(3)	(3)
Niacin	4	(4)	(4)	(4)
Vitamin C	5	5	(5)	5
Vitamin D	(6)	6	6	6
Protein	(7)	(7)	(7)	7
Carbohydrates	8	8	(8)	(8)
Fat	9	(9)	9	9
Calories	(10)	(10)	(10)	(10)
Iron	11	(11)	(11)	(11)
Calcium	(12)	12	12	12

No items picked --
points assigned to
entire question

0 0 0 0

Milk
 Beef
 Green peas
 Bread

} has the same benefits as:

	<u>Milk</u>	<u>Beef</u>	<u>Green Peas</u>	<u>Bread</u>
Oatmeal	1	(1)	1	(1)
Fish	(2)	(2)	2	2
Rice	3	3	3	(3)
Navy Beans	(4)	(4)	(4)	(4)
Chicken	(5)	(5)	5	5
Potatoes	6	6	(6)	(6)
Eggs	(7)	(7)	7	7
Macaroni	8	(8)	8	(8)
Pork and lamb	(9)	(9)	9	9
String beans	10	10	(10)	10
Carrots	11	11	(11)	11
Bananas	12	12	(12)	12
Peanut butter	(13)	(13)	13	(13)
Cottage cheese	(14)	(14)	14	14

Don't know -- points
 assigned to entire
 question =

0 0 0 0

Socioeconomic Status

High = 9 - 13 points

Medium = 7 - 8 points

Low = 4 - 6 points

Score based on following:

Occupation:Points

Professional/technical	4
Managers/officers	4
Other white collar	2
Blue collar	2
Temporarily unemployed	3
Retired	3
Not reported	3

Education:

8th grade or less	1
High school incomplete	2
High school graduate	3
College incomplete	4
College graduate	5
Beyond college graduate	6
Not reported	3

CONTINUED

<u>Type of Neighborhood:</u>		<u>Points</u>
High	Wealthy, society neighborhood. High income and probably some inherited wealth.	3
	An excellent white collar neighborhood. Doctors and high paid executives.	3
	A good white collar neighborhood, but not big executives.	3
Moderate	Mostly white collar; some skilled blue collar craftsmen as well.	2
	Mostly middle level blue collar; some office workers as well.	2
Low	Mostly lower level blue collar; no white collar.	1
	Slum area. Probably many families on welfare.	1
	Not reported (includes "Hard to judge")	2

Self-concept -- Nutrition Knowledge

High = 7 - 10 points

Medium = 5 - 6 points

Low = 1 - 4 points

Score based on a nutrition scale as follows:

10	Know a lot about nutrition (food scientists, home economists, dieticians)
9	} Quite a bit
8	
7	
6	} Some
5	
4	} Not too much
3	
2	
1	Know almost nothing about nutrition

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